Marine Corps Gazette

JUNE 1958
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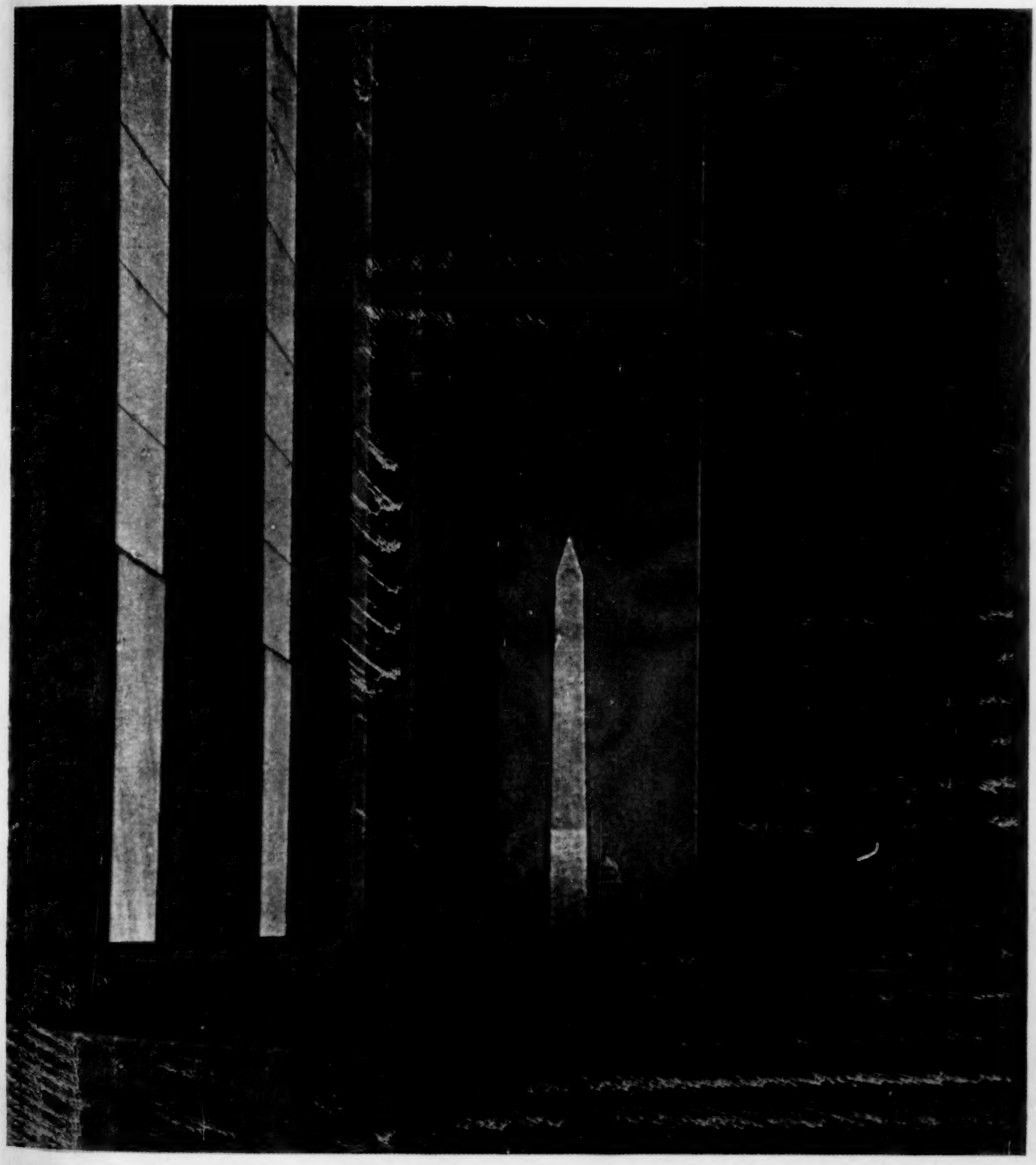

Marine Corps Gazette

JUNE 1958
NUMBER 6
VOLUME 42

PROFESSIONAL MAGAZINE FOR UNITED STATES MARINES

Published by the Marine Corps Association in order to provide a forum for the expression of matters which will advance knowledge, interest and esprit in the Marine Corps

IN THIS ISSUE

WASHINGTON, D. C., symbolizes freedom to all the people of the world. Framed in our cover picture this month are the Washington Monument and the Capitol Building. The former, a memorial to our first president and the latter housing the Senate and the House of Representatives, guardians of a free nation and a free people.

Our professional menu this month offers articles by a British scientist, a General officer, a company grade officer, and an American civilian. Today's military problems demand of a Marine officer, both a thorough knowledge of his chosen profession and a broad contemporary education. This issue should help in meeting that demand.

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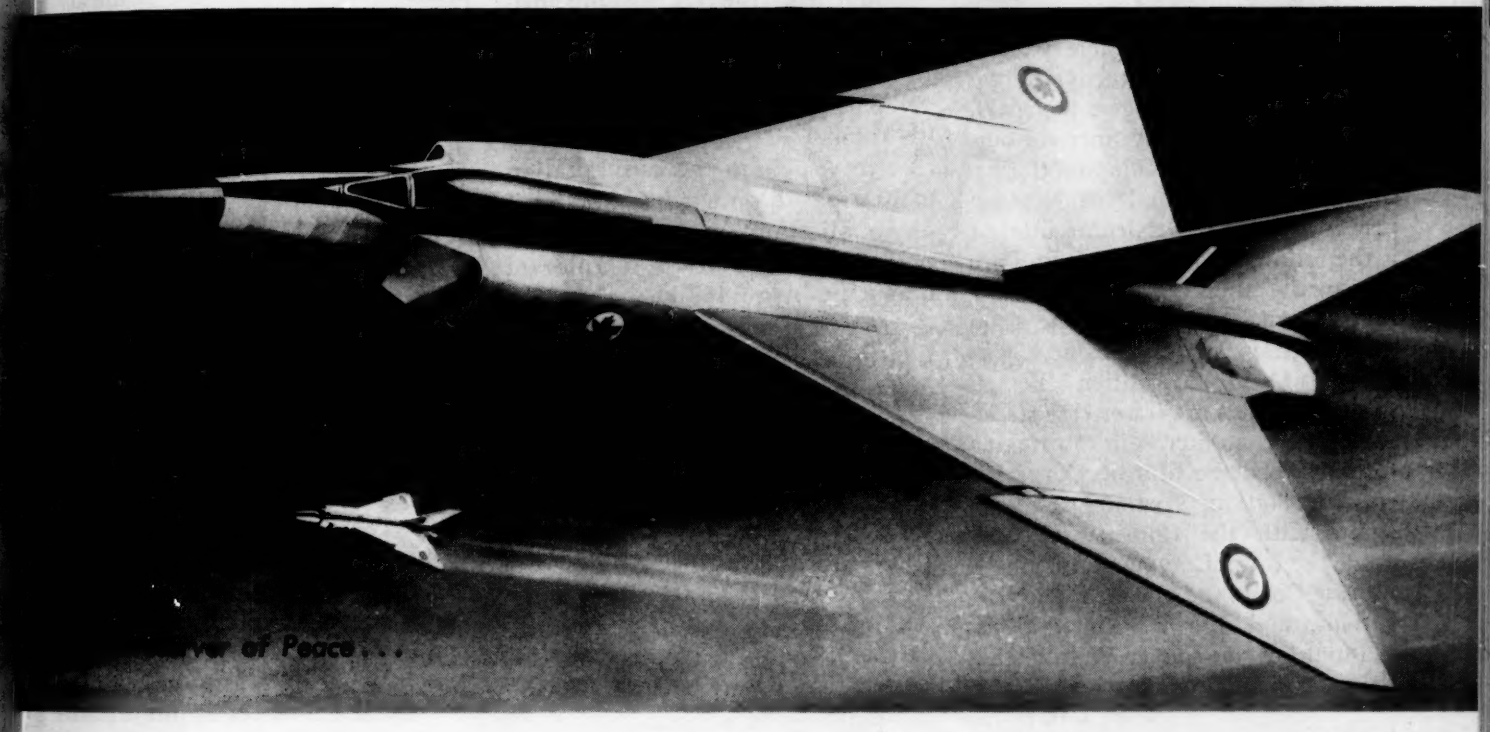
AVRO ARROW



CANADA'S SWIFT, FAR-RANGING ANSWER TO ANY SECURITY THREAT

Every advance in aircraft engineering is exemplified in the Avro Arrow, capable of traveling at well over twice the speed of sound to intercept and destroy enemy aircraft at extremely high altitudes. RCA has been assigned full responsibility for the development of a complete electronic system for fire control, navigation and communication, and an integrated automatic flight control system. While an enemy plane is still beyond the range of human eye, this radar system will detect it, and provide the intercepting pilot with a continuous flow of information, electronically computed in terms of position, range and rate of closing. Associated with RCA in the project are the Minneapolis-Honeywell Regulator Company and several Canadian firms.

RADIO CORPORATION of AMERICA

Tmk(s) ®

DEFENSE ELECTRONIC PRODUCTS

CAMDEN, N. J.

The Big M

. . . TSgt Ripa's letter and the Editor's comments (GAZETTE: Apr '58) "Marine or marine" has caused considerable interest at the Marine Corps Recruiting Station, Portland, Oregon. As procurement aids NCO, a good portion of my time is spent in news rooms of large newspapers. In January 1958, the *Oregonian,* one of the Nation's leading newspapers, and a Pulitzer Prize Winner for outstanding journalism, adopted the Associated Press Manual for Newspaper Writing. Of particular interest is the following quotation from Para 1.36 of the Manual: "Marine is capitalized when standing alone as a specialized group as Evzone, Swiss Guard, Queen's Fusilier, Bengal Lancer. Others are lower case standing alone as, soldier, sailor, airman." Conclusively, the Marine Corps Recruiting Station, Portland, Oregon, agrees with the Continental Congress, the last 3 Commandants of the Marine Corps, the GAZETTE, the *Oregonian,* and the Associated Press Manual for Newspaper Writing that it is Marine and not marine.

MSgt S. H. Hodges
USMC-RS
Portland, Oregon

. . . In regard to TSgt Ripa's query concerning the capitalization or non-capitalization of Marine. I refer him to paragraph 21001, Marine Corps Manual, and thence to pages 65 and 66 of the Navy Correspondence Manual. This indicates that the word used singly is not capitalized. Although this seems to be the officially accepted version, I must agree with the Editor that capital "M" as used in many places in the Corps indicates justifiable pride in our service.

MSgt R. W. Anderson
MARTD
US Naval Air Station
Seattle, Wash.

. . . May I invite your attention to the following extract from the US Government Printing Office Style Manual.

"Marine Corps; the corps:

man

Marines (the corps); but marines (individuals)

Organized Reserve; the Reserve

also a marine, a woman marine, the women marines (individuals)"

. . . In respect to the capitalization of Marines; I cannot but wonder if any publication or organization properly can make its own rules of grammar. Assuming that they can, I doubt that such a prerogative extends to others of us in our personal or professional correspondence.

I sincerely believe that there could be some further explanation to protect the readers of the GAZETTE in their attempting to comply with the more generally accepted grammatical usages.

. . . En fin, my sentiments and my emotions support the big M. My authorities and my research deny me the privilege of using it.

Col Ralph M. Wismer
8th Comm Bn, FMFLant
Camp Lejeune, NC.

Use Aggressor Forces

. . . As a Regimental S-2 having just recently returned from a TAD assignment as an umpire at the recent 3d Marine Division amphibious exercises, I read with a great deal of interest BGen Hudson's, March 1958, article querying effective use of Aggressor Forces in the Marine Corps. This article, in my opinion, points the way to the single most valuable adjunct to realistic and effective training the Marine Corps possesses and possibly to one of the most neglected. It is to be hoped that the seeds planted by this timely article do not fall on barren ground. However, I do feel BGen Hudson has unwittingly interjected certain thoughts which may lead to misunderstanding:

First: Possibly because of his high rank and the upper levels upon which he toils, BGen Hudson's article tends to create the impression that the use of Aggressor Forces is primarily for the major combat units. Nothing could be farther from the truth, and I am certain such an impression was not intended by the author. Actually, it is possible for any combat unit from the fire team to the division to utilize Aggressor Forces as an aid to training, although ordinarily practical considerations tend to limit their use to Company size or larger exercises. Indeed, experience within the 4th Marines, coupled with observation of the use of Aggressor Forces by other units leads me to the conclusion that Battalion size exercises utilizing Aggressor Forces result in optimum benefit to the participating troops.

Secondly: The author makes a statement to the effect that valuable practical results can be obtained with an Aggressor Force approximately equal to one-third the size of the Blue Forces, albeit in emergencies benefits have been obtained with fewer Aggressors. The sense of those particular sentences is unfortunate for it seems to indicate that the ratio of Aggressor to friendly forces ought to be at least one-third or more, whereas that ratio should be the upper limit. Size of the Aggressor forces alone is not the answer, for as pointed out in the article, a small Aggressor force can be made to appear much larger if provided with the means to ensure mobility. In actuality, benefits obtained from the use of Aggressor forces depend upon their intelligent use, which in turn depends upon thorough prior planning. During the planning phases of the exercise it is necessary that the planners always keep in mind that Aggressor is a training aid. Aggres-

(Continued on page 5)

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1948—*Early "point contact" transistor.*

The remarkable transistor observes its 10th birthday

In 1948, Bell Telephone Laboratories announced the invention of the transistor. In 1958, the transistor provided the radio voice for the first United States satellite.

To advance the transistor to its high level of usefulness, Bell Labs had solved problems which, in themselves, approached the invention of the transistor itself in scientific achievement.

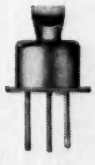
First, there had to be germanium of flawless structure and unprecedented purity. This was obtained by growing large single crystals—and creating the "zone refining" technique to purify them to one harmful part in *ten billion.*

The "junction" transistor, another radical advance, spurred transistor use. Easier to design, lower in noise, higher in gain and efficiency, it became the heart of the new electronics.

An ingenious technique for diffusing a microscopically thin layer on semiconductors was created. The resulting "diffused base" transistor, a versatile broadband amplifier, made possible the wide use of transistorized circuits in telephony, FM, TV, computers and missiles.

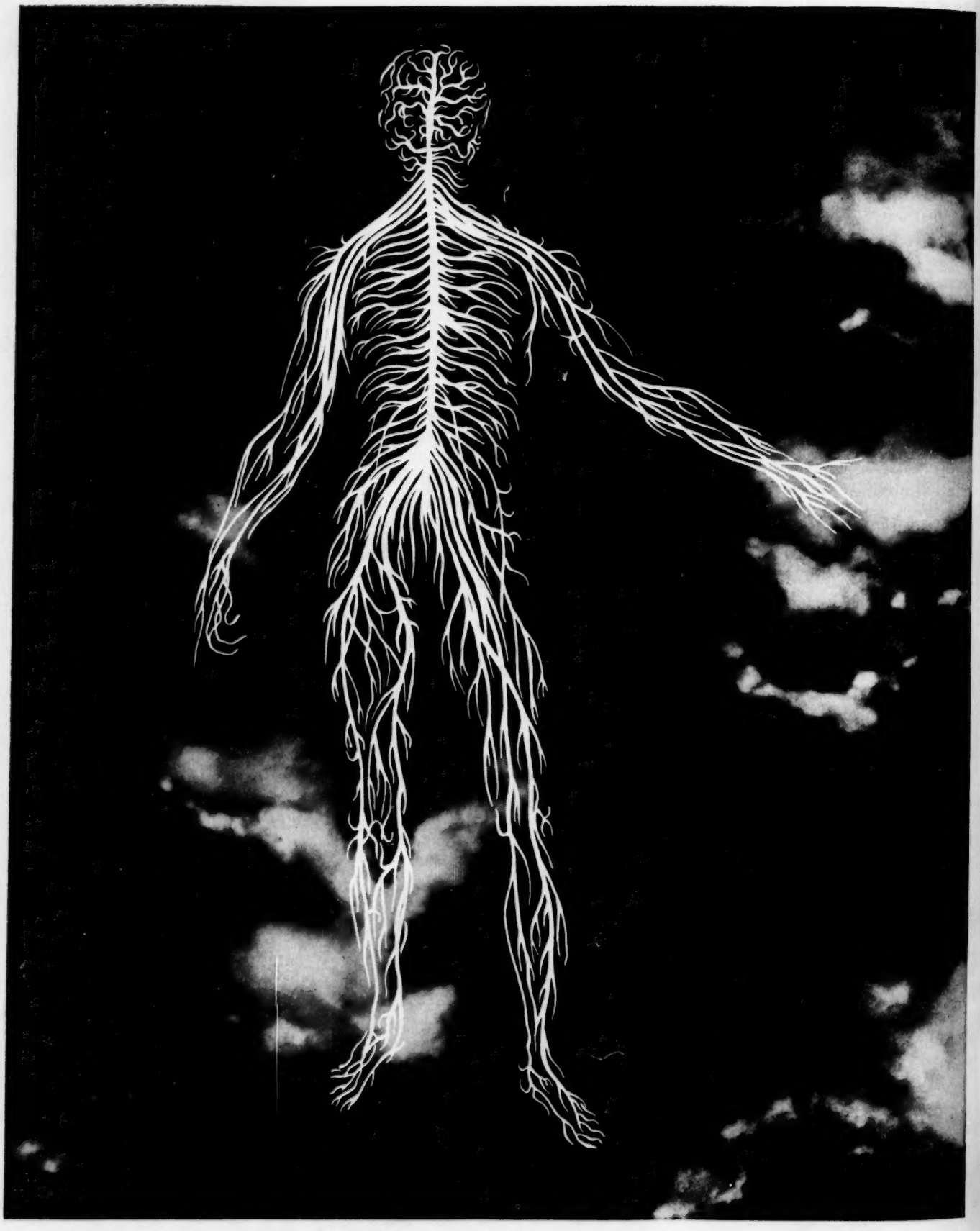
In telephony the transistor began its career in the Direct Distance Dialing system which sends called telephone numbers from one exchange to another.

For Bell System communications, the transistor has made possible advances which would have been impossible or impractical a brief decade ago.



1958—*Satellite transistor, incorporating 10 years of Bell System research and development.*

BELL TELEPHONE SYSTEM



(Continued from page 2)

sor is not a cure-all for the ills resulting from poor planning. It never will be.

Thirdly: BGen Hudson indicates that lack of material may be a limited factor in the employment of Aggressor Forces. On the major command level discussed in his article this may be true; however, at lower levels this problem recedes. For example, communication equipment is a necessity to effective utilization of Aggressor Forces and is generally an item not in excess. So what to do? I suggest you try borrowing it from other units. It is possible they may even lend you the operators. After all, it is valuable training and most units I have come into contact with are happy to obtain it without effort on their part. However, one *caveat* if you desire to continue being able to borrow, observe the ordinary courtesies that go with borrowing and be prepared to give *quid pro quo*.

In conclusion, I should like to add one additional benefit to be derived from use of Aggressor Forces to those enumerated by BGen Hudson. Use of Aggressor Forces creates interest in the exercise on the part of the front line troopers. Too often they are required to move aimlessly over terrain, apparently without purpose and certainly without interest. Use of Aggressor Forces supplies purpose and interest in a most obvious manner. One of our Battalion Commanders, during a recent critique of a landing exercise, told that while inspecting front line units of being asked by one of the men in "L" Company how the men in "Mike" Company were doing on the left. When your troops display that type interest, the training exercise is a success. I'm for use of Aggressor Forces. I hope others are too.

Maj D. B. Hunter
45-340 Ka-Hanahou Circle
Kaneohe, Oahu, Hawaii

Horse Marines

. . . All the regular Navies of the world have the same disease without regard to nationality; it is that most Naval Officers are crazy about horseback riding.

With a stroke of the pen the US exterminated the US Horse Cavalry which had in the past traditions and

(Continued on page 6)

(Continued from page 5)

long pages of glory and achievement. Was this done to substitute a troop of amateur Horse Marine riders?

It takes from 3 to 4 years to train an average cavalryman, and from 10 to 15 years to train a rider for the Olympic games.

In 1914 in London the Imperial Russian Equestrian team won the Olympic games. A member of the team Col (later General) Rodzianko owned several imported Irish hunters valued from $2500 to $3000. The same kind of mounts were owned by other members of the team.

I would advise Capt Pearson to visit the French, Belgian and Italian Cavalry Schools especially the School at Saumure; this would give him an idea what Cavalry training is.

I agree that it was foolish and nearsighted to cancel US Horse Cavalry as it will be needed in any war on wild mountainous territory. There is no sense nor excuse to try to substitute amateur trained troops for horse cavalry.

Col Boris d'Adamovitch Leliwa
Winchester, New Hampshire
Ed: Former Colonel commanding the First Cossack Cavalry Regiment.

Combat Uniform . . .

. . . I would like to, if I may, direct this letter to Capt J. W. Hanker and his fine article "Combat Uniform Atomic Style" (GAZETTE: Apr '58).

The GAZETTE is to be congratulated. Many of my classmates, as well as myself, here at the Basic School have become (painfully) aware of and have discussed the inadequacies of the present Marine Corps uniform. We would surely like to see "your" uniform supplant the present inadequate one. Again I say congratulations.

Please keep us posted on any action taken on our new uniform.

2dLt P. J. Reilly
"C" Co, 1-58 BC
Basic School, MCS
Quantico, Va.

. . . After a literal deluge of dope on the newest gidgets and gadgets for the atomic future—from the ICBM to the newest one-way vehicle to the moon—it was refreshing to read that someone is thinking of the Joe Blow Marine in our nuclear future.

I'm referring, of course, to Capt Hanker's article on "Combat Uniform Atomic Style" (GAZETTE: Apr '58). Maybe his ideas might stand a little ironing out, but the basic thought is sound.

How many of us have experienced the same situations set up by Capt Hanker . . . that scurrying around for a rolling helmet—even the helmet careening down a landing net into a boatload of troops; the inability to communicate, and the need to pass the word to everyone, now, over a wide area; the repeated ranting from Pfc to CG on this, that or the other piece of individual equipment, from canteen to that misbegotten monstrosity that we call a pack? And wondering during Mass Evacuation classes and exercises just what are we going to do if this atomic business ever comes about?

There has been much talk about the role of the infantryman after the bomb is dropped. Our place in future warfare seems to rest almost 100 per cent upon our ability to survive an atomic attack, and to be able to fight after the attack. Here's one vote in favor of Capt Hanker and his ideas. If our troops' equipment doesn't keep pace with development in other military equipment fields, we might not be around to keep pace at all!

Capt H. M. Hart
1st Mar Div, FMF
Camp Pendleton, Calif.

Reader's Views

. . . I would like to take this opportunity to say thanks for the many fine hours of reading and reflection your magazine has given me in the past, and at the same time offer a suggestion in regard to the GAZETTES of the future.

If the editors could add a column to the GAZETTE listing all Officers Orders issued by HQMC, as is done by *Leatherneck* for NCOs, I think it would be greatly appreciated by many of your subscribers.

1st Lt. R. Lloyd Jr.
1stMarBrig, FMF
FPO, San Francisco, Calif.

Ed: We have received a number of suggestions for this feature from Association members, and have studied the matter carefully. At this time such a "column" poses several problems, but the matter is still under consideration and if a feasible solution can be found such a feature may be initiated in the future. The views of our readers on this subject, as well as any other aspect of the GAZETTE, are eagerly sought by the GAZETTE staff.

More 100 Per Cent Units

. . . I believe that Maj John Finn, Jr., of 2dBn, 1stMarines, 1stMar Div (GAZETTE: Mar '58), deserves congratulations. But I also believe that the 1st MarInf Reserve Bn, located in Garden City, L. I., deserves a hand also for being a reserve unit with 100 per cent officer membership in the Marine Corps Association. I might also add that our entire complement of Naval Officers attached to the unit are part of this 100 per cent.

1stLt J. F. McGee
1st InfBn USMCR
Garden City, L. I.

Praise Worthy

. . . Davis Merwin's analysis of the Rockefeller-Kissinger Report was outstanding. Mr. Merwin has been a most astute military observer for many years. He is tireless in his efforts to maintain a balance in the Defense Department. The Editorial Board is to be congratulated for securing such cogent thought on this report. Keep up the good work.

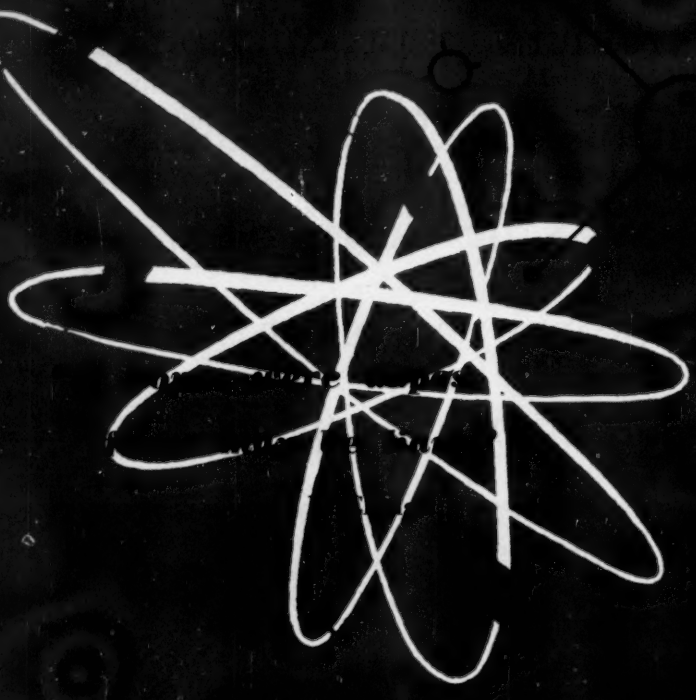
Col W. F. Prickett
G-2 Section, Hq FMF Pac
c/o FPO, San Francisco, Calif.

Guidance for Outer Space

. . . The copy for the April 1958, GAZETTE prompts this letter. The results of the issue's cover must gladden the hearts of all of our skypilots, the Chaplains. I covered the bottom half of the cover and asked a number of the personnel here in the ROTC staff, what type of a guided missile that was. It was surprising at the guesses that took place. After showing them the rest of the picture, I introduced it as the "New Marine Corps' missile, Guidance for Outer Space." Congratulations and a Well Done to Sgt A. A. Humphreys.

Wondered if you have received the little episode that happened at the Chappo Flats rifle range early in 1950. MSgt Swede Stromstead's standing joke was about the old Sgt back in Quantico who turned in the last name on his roster as being absent for the last three times, the name being "total." It was his standing joke until the Monday morning he turned in his first name on the roster as being absent. Chappo Flats never did show up.

1stSgt Anthony B. Kouma
NROTC Unit, Stanford University
Stanford, California



strategy and

I MUST FIRST MAKE IT CLEAR that I am writing not as the Controller of Guided Weapons in the British Ministry of Supply, but as a scientist discussing scientific and operational trends in general terms. Nowadays it is scarcely necessary to explain why a scientist should be interested in what might be considered as predominantly military affairs. The effects of scientific discovery are now so extensive that they cannot be dealt with as mere perturbations of an accepted military environment. Instead they dominate both strategy and tactics, and affect the whole of defense planning.

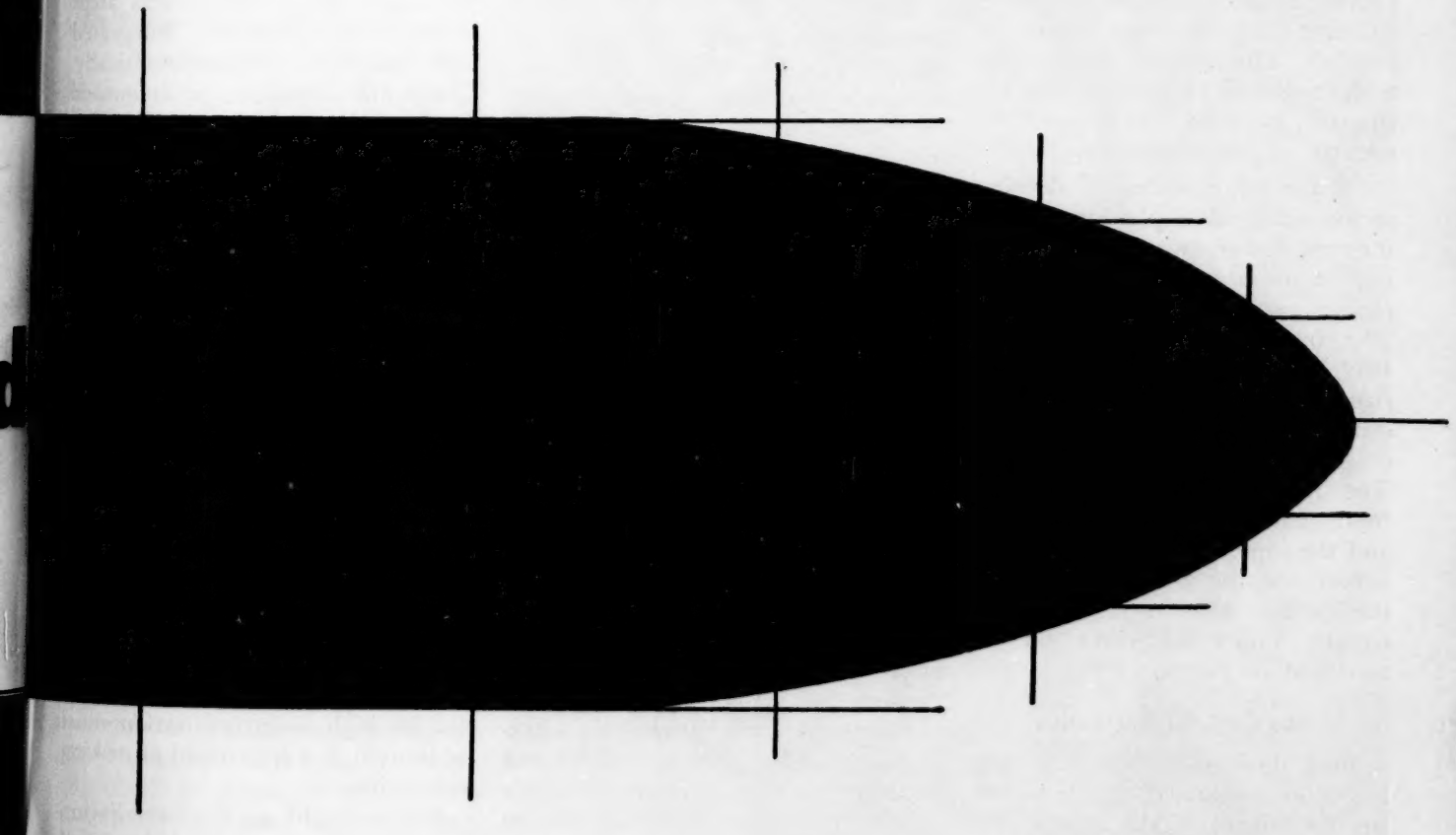
The scientist engaged in defense work must, of course, see to it that achievements in the laboratory are applied most effectively to military requirements; but he is also responsible for the deployment of his resources, and he must therefore examine the assumptions on which these requirements are based. I am going to discuss the changes in the strategy and tactics of warfare and particularly of air warfare, brought about by recent scientific advances, and some of the consequences in research and development for the armed services. The views I express are my own and must not be regarded as describing the military policy of the United Kingdom.

The timescale of development is a critical factor in planning. It is not sufficiently appreciated just how long a period is involved in the consecutive steps of research, development, production and training. Even during the last war it took up to 5 years to achieve a new weapon in quantity, but in peace time it is more nearly 10 years before a new concept becomes available to the Services; and to within a year or two the timescale is much the same for all the major military powers. New requirements must be based, therefore, not on current military assumptions, but on the strategic situation which will arise in 10 years' time.

An important assumption in establishing a future strategy must be the simultaneity of discovery. It is the rule, rather than the exception, for developments to occur at almost the same time in different countries, even though they may be isolated by strict military security. At the beginning of the last war both sides had evolved radar and brought it to much the same stage of development, each thinking that it enjoyed a unique advantage. At the end both were introducing jet aircraft into operational service. Since the

By Dr. R. Cockburn, CB, OBE

with acknowledgement to Dr. Zimmerman, Chairman, Canadian Defence Research Board



war, progress in the atomic field has obviously proceeded at very much the same pace in Russia and in the West; and it is clear that a similar situation applies in the field of ballistic missiles. It is illusory to expect any scientific advance to guarantee permanent military superiority or to compensate for disparity in resources.

We must also accept that our resources are by no means overwhelmingly greater than those of the USSR. Indeed, there are indications that during the next decade Russian economic and military power will become comparable with that of the West. There are good reasons to believe that the rate of production of scientists and technicians in Russia is already greater than in the United States of America. We shall only maintain technical parity if we conserve our technical manpower. We certainly cannot tackle all possible operational requirements or exploit every promising technical proposal. Moreover, when resources are limited, new projects can only be started by stopping old ones. It requires experience and judgment to discard proven weapons in favor of untried concepts, but the issue cannot be avoided. The ultimate decision lies with the Services who have to accept the risks involved, but it is for the scientist to justify these risks.

Of the many technical developments which affect planning during the next decade, two are of outstanding importance. These are the nuclear weapon and the guided missile. The bombardment of London in 1944, by the German V2 and the destruction of Hiroshima in 1945 started developments which are revolutionizing our ideas of warfare. The nuclear weapon is imposing fundamental changes in strategy; and the supersession of the manned fighter and the manned bomber by the guided weapon is having an equally important effect on the tactics of air power.

The Logic of Retaliation

Since the end of WWII, strategy has been dominated by the increasing ascendency of the offense. The nuclear warhead has made possible advances in offensive weapons without any compensating advance in defensive systems. Somewhat paradoxically it is this growing disparity which is imposing a change of strategy. For the last decade this has been essentially offensive; during the next it will become essentially defensive. The combination of the nuclear warhead with supersonic and eventually ballistic means of delivery seemed at first to place civilization at the mercy of the first aggressor, but this is far from being the case. On the contrary, as the threat becomes reciprocal the nuclear weapon provides the basis for a truly stable military environment. The key to this stability lies in the superiority of the offense over the defense; and the greater the disparity, the greater the stability.

For at least the next decade or so the intercontinental ballistic missile should give the offense an almost absolute superiority. Direct defense is certainly not impossible; indeed, conditions can be envisaged in which interception and destruction of a ballistic missile is certainly feasible. But the ability to destroy a missile does not constitute a defense. To be effective a defensive system must cover all vulnerable areas, and must be readily available at any time against a range of possible tactics. Advances in technique are unlikely to remove this vulnerability to surprise. Under these conditions the strategic threat can no longer be used as a compulsive instrument of policy. Any attempt to impose the threat could only invoke the immediate annihilation of one's own population. Between military powers possessing the means for immediate and unstoppable retaliation, the strategic threat becomes neutralized and acts only as a mutual deterrent. We must be careful, however, not to over-estimate the resultant stability. The effect of the deterrent is local rather than global and conditional rather than absolute. Its defensive power does not extend beyond what might be called the tacit bomb-line, that is a line surrounding objectives which are vital and clearly seem to be vital to survival; and it is effective only if threat and counter-threat are reciprocal.

The concept of the bomb-line is so important that we must consider its implications rather carefully. An aggressor would not feel restrained from attacking a country whose retaliatory weapons were limited to targets of secondary importance. It is perhaps not so obvious that in the face of retaliation, attacks on secondary targets cannot be prevented by threating the aggressor's heartland. The defensive function of the retaliatory threat only covers areas which are completely integrated both politically and economically. There will always be areas outside the bomb-line which must be protected but whose importance would not justify exposing vital objectives to retaliation. These must continue to be defended directly.

Even within the bomb-line the deterrent alone does not provide defense against all possible threats. No nation will invoke retaliation while there is any possibility of escaping an irrevocable decision, and minor infringements might have to be tolerated until eventually the ability to use the deterrent itself became weakened. Some air defense within the bomb-line is still necessary to prevent reconnaissance, demonstrations against public morale, and even attacks on isolated military objectives. However, the scale of defense need not be high since infiltration must be limited if it is to avoid provoking retaliation.

Although the logic of retaliation removes one particularly damaging threat, it does not remove all possibility of war. Indeed, the inhibition of major war seems likely to make

Dr. Cockburn, CB, OBE, has a distinguished scientific background. From 1939 to 1945, he was head of the Radio Countermeasures Division (United Kingdom), which was responsible for countering the German navigation systems and for the interception and analysis of enemy radar systems in WWII. Later the division developed airborne and ground equipment to counter the German air defenses. In 1956 he was appointed Controller of Guided Weapons and Electronics in the British Ministry of Supply, and is the first scientist to hold the post.

peripheral wars more probable; but here again the nuclear threat should limit their scale and extent. It will be very much the concern of the major military powers to confine such conflicts and avoid involving themselves too deeply, but tactical nuclear weapons should act more directly to reduce the scale of war. On the one hand, there is less need for concentration and on the other, concentration invites annihilation.

Thus, the nuclear weapon should lead not to Armageddon, but to an easement in the burden of armament because of the restraints which this terrible weapon imposes. Total war is less likely and warfare generally should be limited in scale. As the result the logistic basis of war is likely to change significantly. Military strength will become dependent more on the quality of weapons and techniques than on the size of front line forces. The most important problem facing the Services is to assess the level at which future wars are likely to stabilize; not only because of the effect on our economy but because it determines our choice of future weapons and techniques.

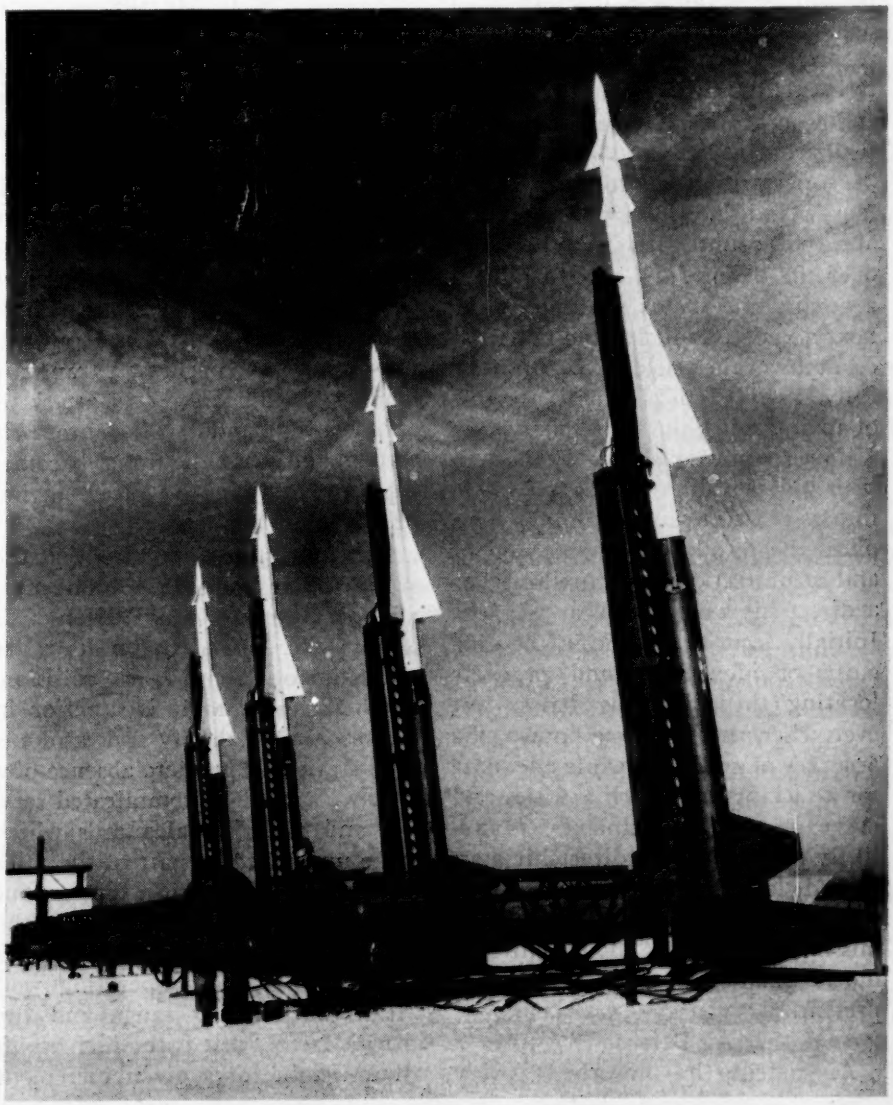
Air Power and the Guided Weapon

Since its inception, air power has been conceived primarily in terms of strategic bomber forces on the one hand and defensive fighter systems on the other; and throughout the history of flight, developments in propulsion, in constructional materials and methods, and in aerodynamic design have made possible progressive improvement in the performance of both. Even so, this has not been achieved without penalty in other directions. Operational demands have been met only by accepting increasing specialization and by sacrificing the intrinsic flexibility of the manned aircraft. Both fighter and bomber require complicated instrumentation to perform their tasks and are dependent on elaborate ground facilities. In recent years requirements have become so rigorous that design has been forced to the asymptotic limit. As a result, supersonic bombers and fighters are excessively large and expensive and have so little latitude in performance that they are more like projectiles than aircraft.

At supersonic speeds there is little opportunity for human intervention once a sortie has been committed. Interception by the fighter and precise attack of its target by the bomber have to be carried out automatically. The point has been reached where the crew have neither the need nor the opportunity to make any contribution and have become merely an embarrassment to the designer and an encumbrance during operations. The logical outcome is the replacement of the manned aircraft by the unmanned expendable missile both as the primary means of imposing the deterrent and as the primary weapon of air defense. The strategic bomber will be replaced by the intercontinental ballistic missile and the close defense fighter by the surface-to-air guided weapon.

The Strategic Deterrent

If it has not been for the imminence of the intercontinental ballistic missile as a practicable weapon, a series of developments in the winged bombers would have been necessary to maintain the strategic threat against improving defenses. The existing bomber flying just below the speed of sound and at heights in the region of 50,000 ft. already has a good chance of avoiding interception by fighters. Against short range guided weapon defenses its operational life can be extended by means of the powered bomb. This will allow it to stand off from a defended target and expose to attack only a small high-flying supersonic parasite. The next phase of the winged threat is the supersonic manned bomber flying at 2 or 3 times the speed of sound and at heights up to 70,000 ft. This will severely tax even a sophisticated guided weapon defense. Closing speeds are so high that there is little time available for interception and at these heights it is difficult to provide the guided weapon with enough maneuverability. Eventually



unmanned aircraft flying at 3 or 4 times the speed of sound and at heights up to 100,000 ft. would present an extremely difficult problem to any form of defense.

These successive developments would have been a heavy commitment for many years ahead. Moreover, they involve vulnerable ground facilities which have to be defended. The ballistic missile is a more effective and economic weapon and there seems little justification for continued refinement of the winged threat. As is so often the case, the problems of ballistic flight which at first appeared so formidable, have turned out to be quite solvable and intercontinental ballistic missiles of sufficient range and accuracy are on the verge of achievement. Nevertheless, it would be unwise to assume that continued development will be unnecessary. Improvements can be expected not only in range and accuracy but, more important, in reliability; and advances by an opponent in methods of delivery or of defense will have to be matched if reciprocity of the strategic threat is to be maintained.

The operational value of the ballistic weapon lies in its large margin of superiority over foreseeable defenses, and in its relative invulnerability to counter-attack. Superiority over the defense is likely to remain a dominating factor for at least the next decade permitting the potential economy of the nuclear weapon to be fully exploited and reducing the cost of maintaining the deterrent.

The second advantage of the ballistic missile is that the entire launching site can be underground. This offers the possibility of concealment and of protection from anything bar a direct hit with a nuclear weapon. Initially security will lie in the difficulty of identifying and precisely locating the launching bases; but even when these become known, the accuracy of guidance, while adequate for attacking areas such as cities and even aerodrome complexes, is unlikely to guarantee a direct hit on a buried launching site. When the deterrent is based on the ballistic missile its defense should involve much smaller resources than at present.

Air Defense

Air defense has absorbed a very large technical effort during the last 10 years. The attritional defenses of WW II were clearly inadequate against a nuclear threat. The aim had now to be the complete destruction of every raid and effectiveness had to be assessed in terms of the proportion which got to the target rather than the proportion destroyed. The requirements of annihilation defense are formidable, particularly against an attack of any size, supported by electronic countermeasures. Attempts to build up large handling capacity by complex systems of data-handling are likely to fail catastrophically under conditions of jamming and spoof.

The effectiveness of any air defense is determined by its radar environment rather than by the actual weapons available. It is the radar environment which restricts air defense to horizon range and which limits its ability to withstand large-scale attack. Reduction in the scale of threat as the logic of retaliation becomes accepted should reduce the problems to manageable proportions.

Progress in propulsion and aerodynamics has advanced equally the weapons available to both offense and defense, but as the speeds of both have increased, the time available to the defense has become progressively less. The demands on the close-defense fighter have therefore become increasingly onerous. There is barely time to complete a pursuit-interception even against a transonic bomber. Collision-course attack is only feasible under fully automatic control and when the threat becomes supersonic is likely to prove an impracticable maneuver.

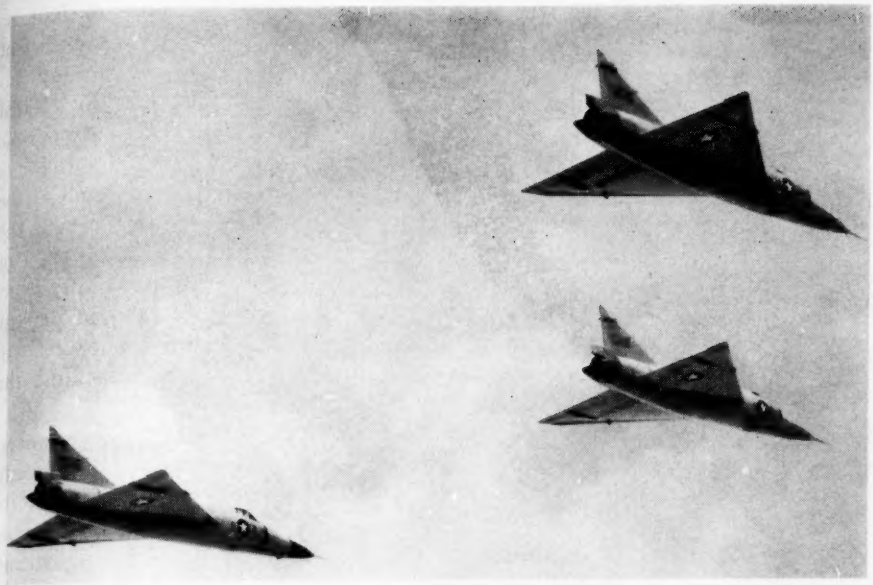
It is inevitable, therefore, that the ground-to-air guided weapon must take over the task of air defense. It is no more dependent on its radar environment than the collision-course fighter and it is superior in performance, lethality and economy of operation. The mere absence of a crew with all their complicated services and essential safeguards which make up so large a part of the military load of fighters is a tremendous relief to design. Moreover, since the weapon has only to make the outward journey, it is operating well within its limiting range and the growth factor, that is the increase in all-up-weight for a given increment in military load, is far less than for the fighter. It is thus a more efficient method of delivery and it is not surprising that surface-to-air guided weapons will reduce the cost of close air defense. Costing depends on a number of assumptions, such as the scale and duration of the attack, the area to be defended, and whether or not there is an existing infra-structure, but a guided weapon defense should be several times cheaper than a fighter defense, even against the existing threat.

The guided weapon has, however, a much greater potential performance than the fighter. Its thrust-to-weight ratio is greater and it is able to withstand more severe operating conditions. As a result it climbs more rapidly, reaches a higher ceiling and is much faster than the corresponding fighter. Its smaller size and stronger construction allow it to develop greater later acceleration and to respond more quickly to control. It can deal more effectively with target maneuver during interception and with aiming errors in the final phase of the attack; and it carries a much larger warhead. The surface-to-air guided weapon should match the performance of any winged threat for a long time to come.

Peripheral War

Although the manned aircraft is being superseded by the guided weapon in close air defense and as the means of imposing the deterrent, it does not follow that it no longer makes a vital contribution to air power. On the contrary, the manned aircraft is still the only means of providing transport, surveillance, and tactical support, and the requirements of peripheral war are likely to increase rather than decrease the importance of these roles.

Surface-to-air guided weapons could presumably be used for the defense of overseas bases and ballistic missiles could be effective against fixed targets in rearward areas. But despite its potential advantage in performance and in economy of operation, the guided weapon is useless unless it is supplied with precise target information. The strategic threat is imposed primarily on areas whose position is already disclosed, and in air defense the target is discernible against an empty background. In



field warfare, however, forces will be dispersed, mobile, and concealed, and before they can be attacked they must first be discovered. Military concentrations behind the front line which are the appropriate targets for nuclear weapons will have to be located by reconnaissance from the air; and the aircraft which carries out this reconnaissance could also deliver the strike. There is at present no real solution to defense against low-level attacks and this could become the preferred method for ensuring both tactical reconnaissance and strike.

The interceptor fighter may also have a useful function to perform. Its failure as a weapon of close defense is due to its restricted environment and to the high performance of the strategic bomber. But in peripheral warfare there may be sufficient air space to permit fighter operation against, for instance, aircraft engaged on reconnaissance and maritime surveillance.

Transport remains as always an important aspect of air power but much of the advantage of transporting military forces by air can be wasted by time required to bring forces into readiness, by dependence on permanent aerodromes which are not always available close to the scene of operations, and above all by lack of numbers. There are rarely enough aircraft to avoid a slow-build-up by successive lifts. Economy of operation will always be an important factor for military transport as for civil, but this does not depend only on economy in flight. Military transport is concerned less with economic cruising performance and with high utilization than with minimum demand on terminal facilities, ability to handle a wide variety of loads, rapid turn-round and immediate readiness.

Air transport could also make an increasing contribution in the front line. Close support air transport could prove less expensive than is usually supposed when account is taken of the consequent savings in road transport and of changes in front line requirements. A large proportion of the stores required by an army in the field is consumed by the logistic tail and significant savings are possible if delivery to the front line can be guaranteed. Air transport under conditions likely to arise in limited war need not be excessively vulnerable to interference by the enemy. Low flying, particularly at night or in thick weather, poses a difficult interception problem, especially when the sorties are well dispersed.

For many years the struggle for superiority between bomber and fighter has provided the main driving force in the aeronautical field. Advances in technique necessary to meet stringent military demands were directly applicable to commercial requirements; and military aircraft were often the precursors of subsequent civil aircraft. In particular, the development of the aircraft engine on which all aeronautical progress ultimately depends was sustained primarily by military needs. In recent years, however, military design preoccupied with performance at any cost, has diverged noticeably from civil design.

We need not fear that the termination of the competition between fighter and bomber will destroy the stimulus to further aeronautical progress. There are many possibilities yet to be explored. For instance, military aircraft must become less dependent on extensive ground facilities if they are to avoid counter-attack. Jet assisted lift could lead to quite new approaches to the problems of landing and take-off and to more efficient performance in flight. Military requirements in the future are likely to be based more on the economics of operation than on marginal superiority in combat, and the design of military and civil aircraft should again become more closely comparable. This should prove very much to the advantage both of the Services and of civil operators, and should contribute to the overall efficiency of the aircraft industry.

I have been considering scientific and military developments in general terms rather than as affecting any particular country or any particular Service. But it seems clear that as the change from central retaliation to peripheral defense develops, sea power becomes a critical component of our military potential. The freedom of the seas is vital to the Western alliance. our whole way of life depends on it. Whether this is our strength or our weakness lies in our own hands. Military power is not just an ultimate retribution to be imposed on a transgressor, it has to be exercised continuously under a variety of conditions throughout the world. Throughout history, sea power has proved to be an economical means of restraining an aggressor and maintaining law and order. We have now to weld sea and air power into an integrated military force in an age of nuclear weapons. It will require a combination of the techniques and operational experience developed separately by land, sea and air forces if the maritime strength of the West is to be fully exploited. USMC

NEW SEEING EYE FOR GROUND TROOPS

Ground troops may soon have targets spotted, marked and photographed by a new high speed observation airplane designed and built by Grumman.

The YAO-1 Mohawk, powered by twin turboprops, incorporates maximum passive defense and ejection-seat pilot safety. Highly maneuverable for low level missions, the Mohawk's bubble type canopy affords the

two man crew excellent visibility in all directions.

The Mohawk is a STOL type airplane (short take-off and landing) and can be operated from small unimproved fields, even when covered with snow or mud. The Grumman YAO-1 Mohawk will help increase target acquisition and observation.

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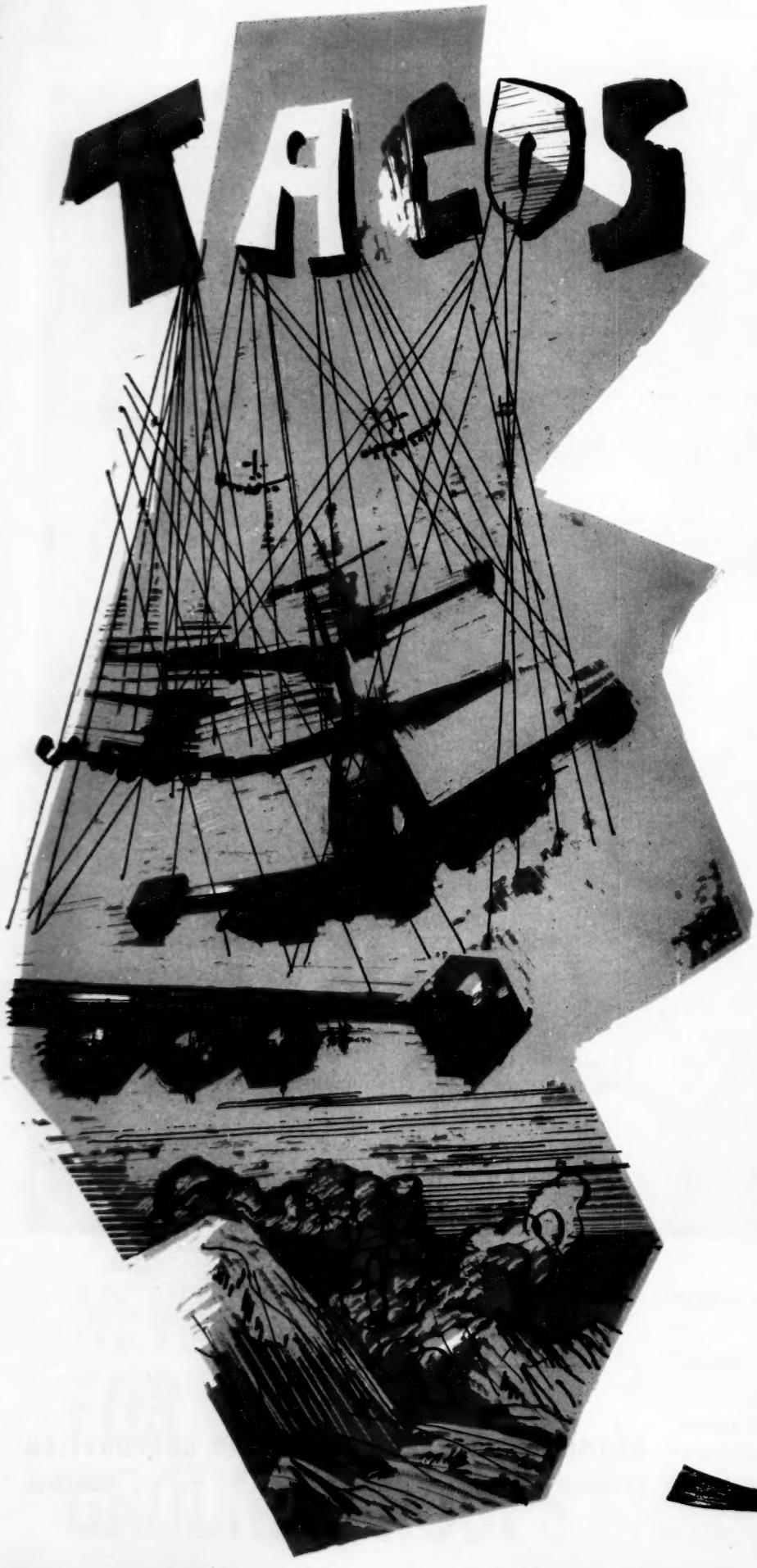


TACOS

By Maj William L. Traynor

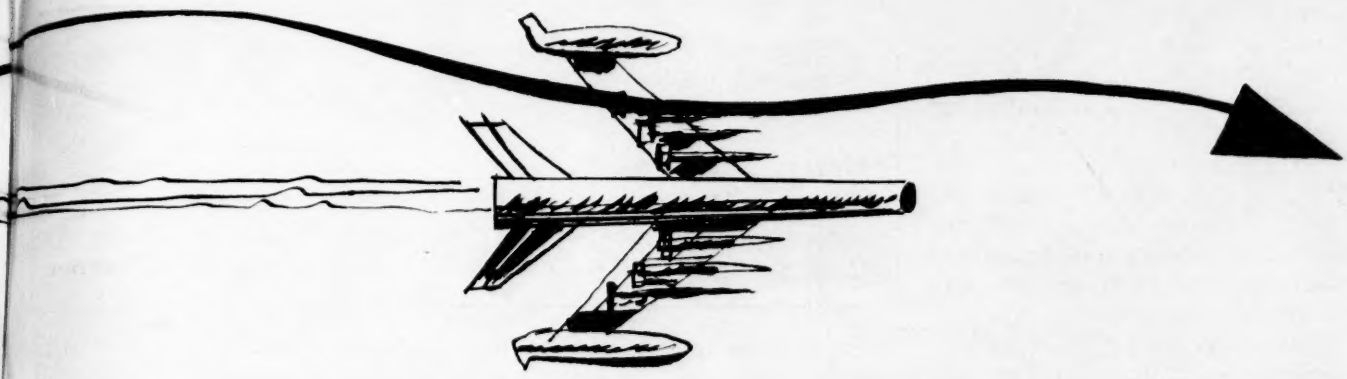
On 1 September 1957, Headquarters, Tactical Air Command and Headquarters, US Continental Army Command jointly published the manual for Joint Air Ground Operations. With the publication of this manual the demise of the Joint Operations Center concept of tactical air direction and control in joint air-ground operations was made official and complete.

It will be remembered, especially by Korean veterans, that the "JOC" was the marketplace for air support. It was the command post of the tactical air commander. From this nerve center emanated all allocations of air effort. Aircraft were allocated to counter air, to interdiction, and it was to the JOC that the supported army commander went for his air support.

In theory one tactical air force supported one field army, and the JOC was the agency which coordinated and directed the close air support effort of the tactical air force commander.

The Air Force found fault with the JOC concept because it placed the control and direction of all counter air, interdiction and close air support air effort in one central installation. This was not in concert with new air force doctrine requiring decentralization and dispersion.

The Army was dissatisfied with the



JOC method of doing business because it in effect forced the army commander who wanted close air support to approach the tactical air force commander, hat in hand, and compete with the tactical air force commander's requirements for counter air, air defense and interdiction.

With both participating parties dissatisfied, the joint aspects of the joint operations center were fading rapidly. This, however, did not eliminate the requirement either for close air support or for joint air ground operations. A new concept, based on new organization, new equipment, new tactics, was required. Such a concept has been developed — the TACOS (Tactical Air Control and Operations System) but before this new concept could be launched some new and basic changes in the air-ground environment were required.

The new tactical air force will be deployed in an area approximately 300 miles wide and 500 miles deep. One tactical air force will provide close air support and tactical air reconnaissance for two or more field armies, i.e., one army group. This moves the tactical air force commander up one notch, to the command level of the army group commander.

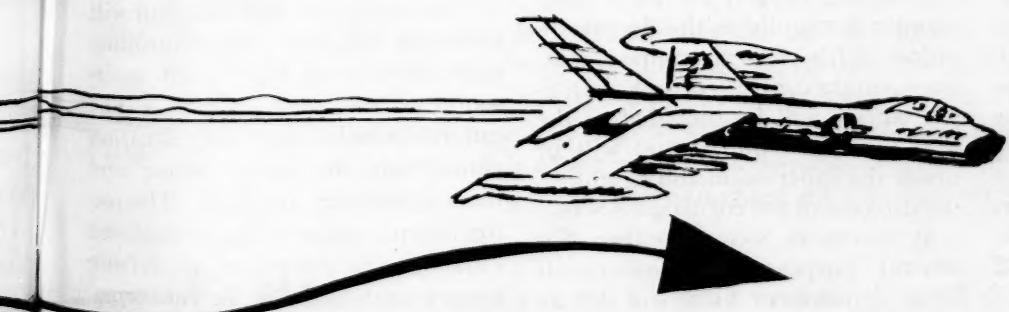
The field army will be deployed in an area approximately 100 miles fore and aft of the line of contact. This area is titled the "combat zone." The combat zone is the property of the field army commander because it now lies within the means of his organic weapons. All air strikes within the combat zone must be coordinated with the field army commander, and the definition of close air support has been broadened to include all air strikes within the combat zone. Air defense of the combat zone is the responsibility of the field army commander.

The field army remains the prime user of close air support on the battlefield. This requires that the close air support effort of the tactical air force commander be planned and coordinated at one echelon below his own. To satisfy this requirement the air force has decentralized the control and coordination of close air support to the field army level, at the same time retaining control and direction of counter air and interdiction at the tactical air force/army group level.

The tactical air force commander will continue to allocate his air effort to accomplish his combat tasks in accordance with his mission and existing conditions in the area. A certain percentage of his total air effort will be utilized in his counter air and interdiction operations. He will also make available to the army group a certain small percentage of his total air effort for close air support. The army group will in turn reallocate this air effort to the various field armies. These reallocations from army group to field army will be expressed in "sorties." In this manner the field army commander receives his allocation of air support from an army source rather than an air force source. The actual direction and control of the air effort made available for the support of the field army is accomplished by the air support operations center.

The key functions of planning, coordination and direction of preplanned and immediate close air support are accomplished by the action and reaction of the ASOC (Air Support Operations Center) of the tactical air force and the TSC (Tactical Support Center) of the field army.

The TSC is the coordination agency for all supporting arms for the field army. It is organized into 5 highly mobile sections: the directors section, the fire support section, the air defense section, the electronics warfare section, and the direct support aviation section. The direct support aviation section concerns itself with organic army aviation and the processing of requirements for close air support. Request for close air support proceeds from the origi-



nating battle group G3 (Air), to division, is monitored by corps, then on to the DSAS (Direct Support Aviation Section). Here all requests are consolidated, evaluated, assigned an army priority, and forwarded to the ASOC as army targets. The ASOC schedules the necessary air weapons force requirements, considering aircraft availability and weather, and the missions are flown.

The ASOC can originate no missions of its own. It can only react to army requests. It also functions as an intelligence gathering agency for the TSC. The director of the ASOC has the additional duty of acting as advisor on air matters to the field army commander.

Although new concepts of operation, new equipment, and a new organization of forces have required the development of new systems of aircraft direction and control, many of the old principles of operation and employment still apply. The tactical air force still has the 4 primary air tasks in an overseas area of operation, i.e., counter air, interdiction, close air support, and tactical air reconnaissance. To accomplish these tasks effectively, a tactical air force commander must have a system which will enable him to employ all types of air weapons under centralized control from highly mobile installations with maximum flexibility, and at the same time fully coordinate his air effort with the supported surface forces. The new Tactical Air Control and Operations System meets these requirements. It provides for immediate reaction and rapid employment, control and coordination of the air effort. The TACOS is composed of the following major functional components:

1) Tactical Air Force Headquarters: The tactical air force headquarters, located in the rear of the deployment area, will coordinate closely with the army group headquarters, and will handle the normal functions of broad planning, logistics, administration and intelligence. It will command the tactical air units deployed in depth on rear bases and forward air strips. The air units will include fighter bomber aircraft, fighter day and fighter interceptor aircraft, tactical bomber units, tactical air reconnaissance units, and tactical missile squadrons.

2) Air Operations Center: The air operations center serves as the command post for the tactical air force commander. The Deputy Chief of Staff for Operations of the Tactical Air Force Headquarters is responsible to the commander for the overall conduct of air operations. He is responsible for the air operations center which is manned by the combat operations section of his staff. The Chief of the Combat Operations Section is placed in charge of the air operations center and given the responsibility and directive authority to develop and implement day-to-day air plans. The air operations center is functionally organized into 2 sections or branches: the Operations Control Branch and the Operations Planning Branch. The air operations center makes air effort available to the air support operations centers for close air support and reconnaissance for the field army.

3) Air Support Operations Center: The tactical air force provides a mobile operations direction agency (ASOC) to work with each field army. The main function of the air support operations center is to direct the air effort made available by the air operations center in support of the field army. The Director of the Air Support Operations Center orders air missions consistent with the priorities established by the tactical support center of the field army. Here at the TSC/ASOC level all detailed coordination of close air support and tactical air reconnaissance is accomplished. It is with this agency that the tactical air force commander accomplishes the decentralization of his close air support task. Forward air controllers and air liaison officers will be provided to the field army as required and will be under the supervision and control of the director of the cognizant ASOC.

4) System of Sector Control: For control purposes the tactical air force deployment area will be divided into 3 sectors. (That's right, students — two up and one back.) The forward areas will be approximately 150 by 200 miles; the rear sector will be about 300 miles square. Most of the combat air action and air traffic is expected to be in the forward sectors. A sector control center will be placed in each sector. Deployed around each SCC will be radar sites. Air action information, and air intelligence received from these radar sites will be processed through the SCC to the AOC or the ASOCs as required. The basic scheme of sector control is to establish centralized command at the AOC with direction of routine air operations delegated to the sector control centers.

Deployed around each sector control center will be control and reporting centers (CRC) and control and reporting posts (CRP). These are the primary direct control agencies. The CRCs will be equipped with high traffic capacity, search and height finding radar. To provide low altitude radar coverage there will be gap filler control and reporting posts tied into each CRC where information will be filtered before being passed to the sector control center. The CRP will extend the radar coverage of the CRCs and provide the SCC with maximum early warning.

Target director posts will also be located, as required, in each sector. The target director posts will control offensive air missions during the hours of darkness and bad weather.

This system of sector control will have the capability of controlling and intercepting high speed supersonic aircraft and missiles. The radars present the air situation throughout the entire sector and deep into enemy territory. The sector control center with its deployed radar sites is the prime air defense agency of the tactical air force commander.

US MC

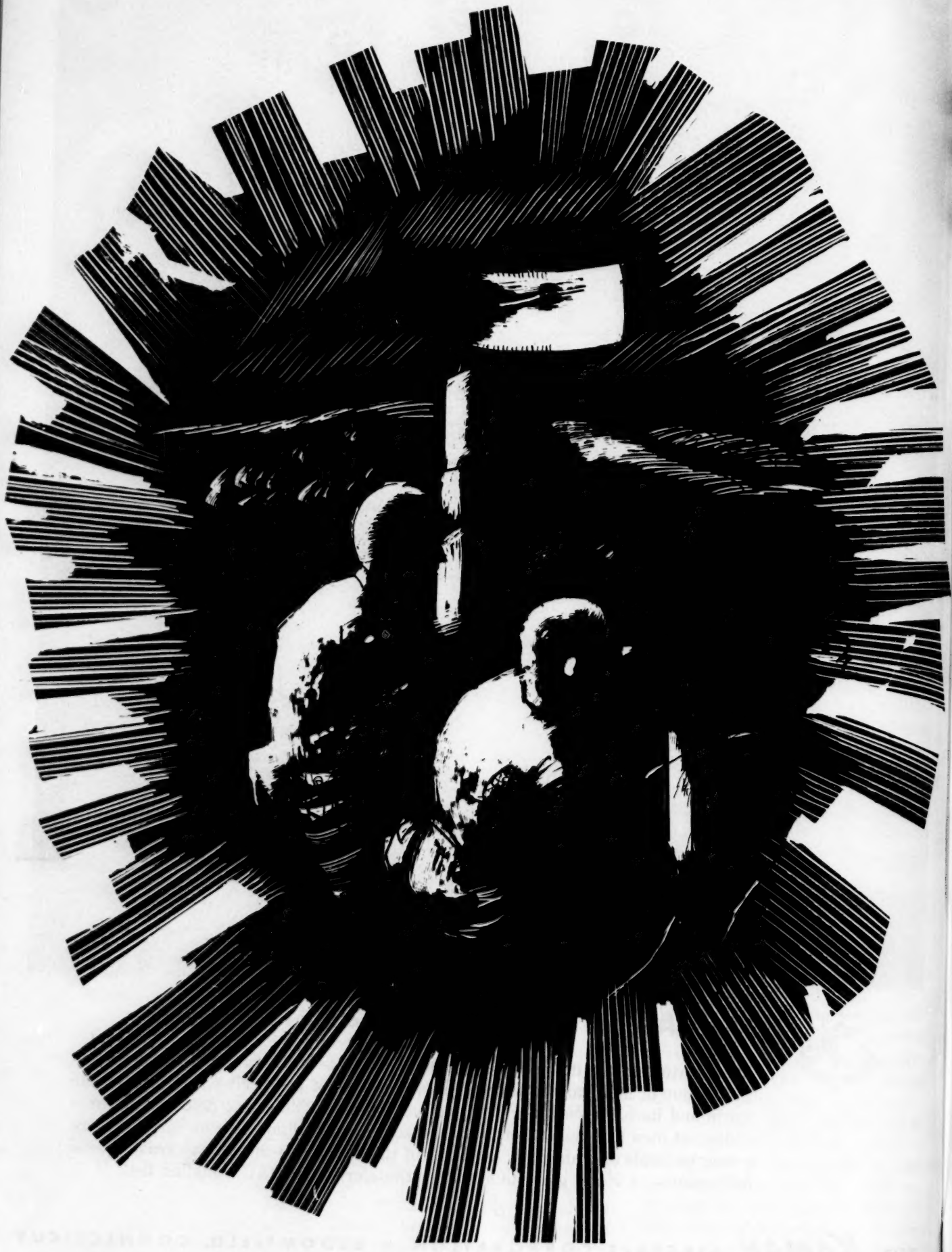
Maj Traynor enlisted in the Marine Corps in May of 1942 and was commissioned in July of 1943. During WWII he served in the Central Pacific, Okinawa and Japan. He wrote this article to show Marines the Tactical Air Command's air control system. At present he is Marine member of the Staff, USAF, Air Ground Operations School, Tactical Air Command, Keesler AFB, Miss.

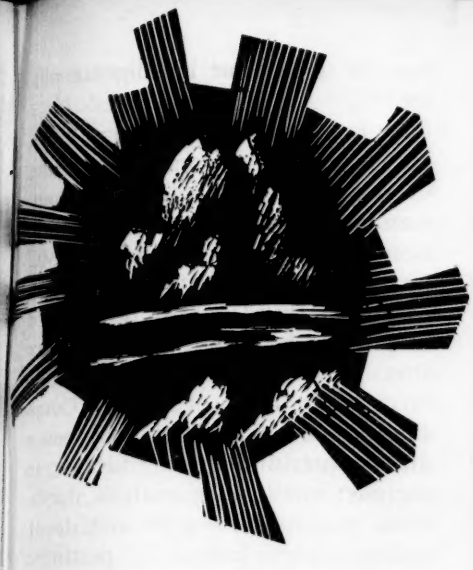
"SAC" . . . *the mailed fist and the velvet glove*

The greatest factor in keeping the cold war cold is our Strategic Air Command. This group of men has the supreme responsibility of preserving the peace of the world and its harnessed might is our best defense. The esprit de corps of these dedicated men has been whetted to a razor's edge and nowhere on earth is there a finer example of teamwork. Evidence of this kinship is the Kaman crash rescue helicopter – a velvet glove to stand on the alert with SAC's mailed fist.

THE KAMAN AIRCRAFT CORPORATION • BLOOMFIELD, CONNECTICUT

PIONEERS IN TURBINE POWERED HELICOPTERS





MINIMIZING UNCERTAINTY...

THE THREE HEADED SPOOK

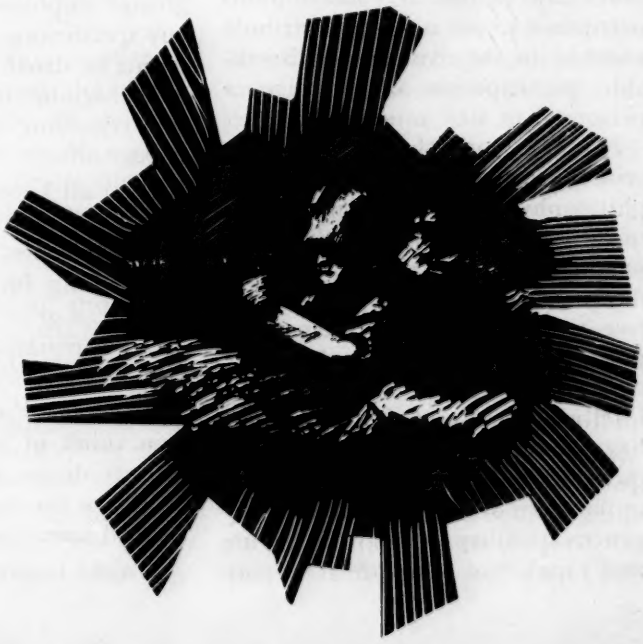
Intelligence collection, processing and dissemination must now be geared to a higher degree of speed and accuracy than has ever been required in past wars

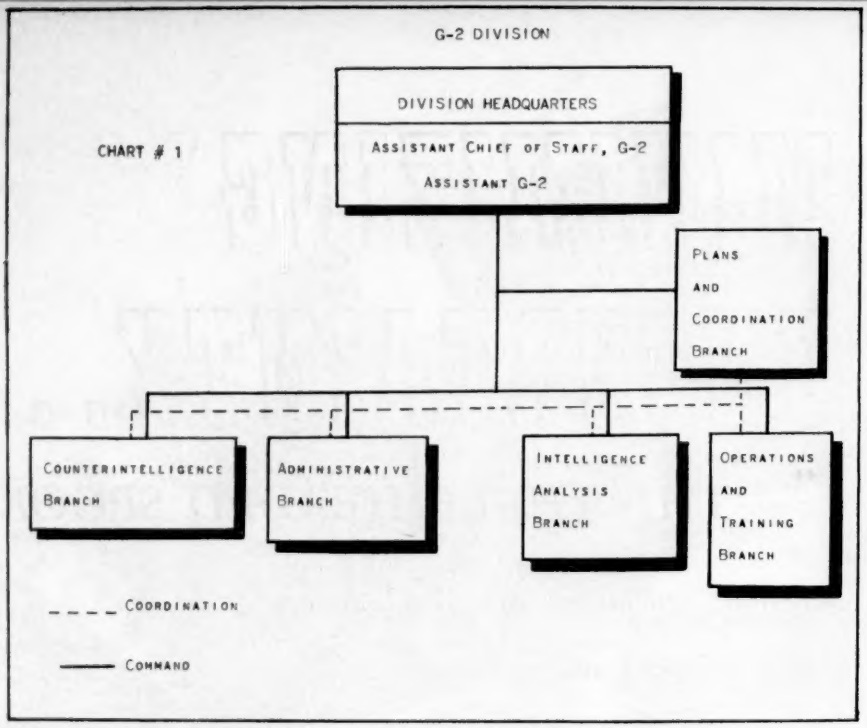
By BGen James M. Masters, Sr.

THE JOB: REDUCE THE UNCERtainty. Uncertainty is an ugly 3-headed spook, which will haunt the commander on the sparsely populated nuclear battlefield just as surely as it haunted Gen Washington at Trenton. The spook's 3 heads? The enemy, the weather and the terrain—3 unknowns which defy complete clarification. We can't eliminate the uncertainty, but we can reduce it. We can't slay this 3-headed spook, but we can whittle him down to size, if our intelligence system is suitable—in terms of personnel, doctrine, organization and material resources—to do the job. It is axiomatic that, the more we reduce the uncertainty, the better prepared we are to make sound decisions and to carry out our mission and thus achieve our objectives.

A little knowledge is a dangerous thing, but it seems apparent that a little knowledge about the enemy, weather and terrain is better than no knowledge at all. As the famous English essayist, Aldous Huxley, put it "If a little knowledge is dangerous, where is the man who has so much as to be out of danger?" Let us always remember that the battlefield commander is never out of danger in this respect. And let us never forget that uncertainty, too little knowledge, the lack of reliable information – call it what you may – has changed the outcome of battles, which in turn has determined the fate of nations and altered the course of history.

Of the 3 unknowns, that regarding the enemy, being the most difficult to resolve, is normally the most critical. But it is also apparent that, in this era of vertical envelopment tactics and wide separation of units over vast objective areas, successful accomplishment of the operational mission requires that the command have current, detailed and accurate weather and terrain information. This is particularly true when the





situation permits or requires the use of nuclear weapons.

A commander – any commander, ground or air, at any level – must appreciate and shoulder his intelligence responsibilities or fail in the effective discharge of his operational functions. At the platoon and company levels, commanders must perform the dual, inseparable intelligence / operations function themselves. But, at the battalion, squadron and higher echelons, a commander may call upon his intelligence and operations officers, respectively, to assist him in carrying out this dual function. The term "dual function" has been chosen advisedly; recognition of its aptness is the key to the stimulation of healthy growth for our somewhat stunted intelligence capabilities; acceptance of its pertinence to our modern doctrine is essential to the dynamic, indispensable participation of intelligence personnal in staff processes.

Nothing earth-shaking in these pronouncements? Cracker-barrel philosophy? Affirmative on both counts. But deny if you will that, in the pell mell rush to solve day-to-day problems, to develop more effective weapons systems, faster transportation and streamlined tactics, we have been prone to overlook our intelligence requirements. True, we have paid lip service to these requirements by acknowledging the importance of developing an intelligence capability that is in step with, and capable of adequately supporting, our operational prowess. But acknowledging the importance is not enough. We must assign a high priority to the requirement for developing an integrated, aggressive intelligence system, one that can reduce to a minimum the uncertainty regarding the enemy, weather and terrain. As one Marine General officer put it: "Our primary problem is to break down the dead-center-inertia which surrounds intelligence."

Aware of our shortcomings in this connection, the Commandant of the Marine Corps has taken positive action to correct this situation. In mid '57, he informed all Marine General officers of his concern and interest in the matter and pointed out the necessity for placing immediate and greater emphasis on intelligence. If any specific one of the several major points he drove home could be said to be high-lighted, it was his suggestion regarding selection of an intelligence officer:

"You all know the kind of an officer I am talking about. He is the one who comes to mind when you are looking for a regimental commander, a group commander, a battalion commander, a squadron commander, a chief of staff, an executive officer, or an operations officer. You think of him because he has already demonstrated his command ability or his practical knowledge of tactical operations.

"In the future, that kind of officer has got to be your intelligence officer."

In furtherance of his convictions and to stimulate momentum in the overall intelligence effort, the Commandant then directed a reorganization of the G-2 Division at HQMC (as indicated in Chart #1). As now organized this Division is designed to provide him with a staff agency that will provide effective, top-level monitorship of Marine Corps interests in all fields of intelligence and counterintelligence endeavor, to include: intelligence analysis, operations, training, research and development, participation in pertinent joint matters (JCS papers, etc.) and the military personnel security program.

It is significant to note that the Commandant, in augmenting the G-2 Division, has elevated the T/O rank of his Assistant Chief of Staff, G-2, from Col to BGen. Furthermore, he ensures that officers being assigned to his G-2 Division have had wide command and operational experience. If there is a solution to our intelligence problems—and there is—the Commandant is determined to seek it out.

Early this year, CMC announced his Intelligence Objectives for the foreseeable future. Briefly these may be stated as follows:

1) Stimulation of a comprehensive interest in intelligence activities;

2) Development of an integrated intelligence system to provide timely, reliable intelligence and detailed target information;

3) Formulation and development of intelligence doctrine and concept responsive to current tactical doctrine;

4) Establishment of education programs and schooling to increase intelligence awareness of Marine Corps personnel.

5) Research, development and field testing of intelligence projects which are responsive to Marine Corps requirements.

In responding enthusiastically to the Commandant's objectives, General officers have contributed a wealth of helpful ideas, concepts and suggestions, many of which have already been translated into action.

From a Marine Corps-wide evaluation, how and what are we doing

about realizing these objectives?

1) Stimulation of a comprehensive interest in intelligence activities. This appears to be the foundation upon which our whole program is built. Problems involved in stimulating interest in anything (except promotion or the pay raise) are obvious. You can no more order people to be interested in intelligence activities than you can order them to have high morale. The approach must be more subtle. And having proceeded this far through this article, the reader must have guessed that the author is attempting (with all the subtlety of a nuclear detonation) to whip up a modicum of comprehensive interest if not missionary zeal.

Specifically, troop leaders can contribute substantially to the accomplishment of this objective by emphasizing intelligence collection aspects in all training exercises. The practice of gratuitously issuing enemy information in training exercises creates torpidity among all personnel concerned with collecting information. And who isn't concerned? Only by requiring subordinates to dig aggressively for every scrap of enemy information can we stimulate comprehensive interest in intelligence activities. To this end the Commanding General, 1st MarDiv has established an iron-clad policy that all exercise directives emanating from his headquarters must contain specific reconnaissance and intelligence training objectives. "I consider the latter to be of particular importance," he writes, "inasmuch as these objectives constitute the tests by which the adequacy of our reconnaissance and information-gathering means, associated equipments, and intelligence processing/dissemination techniques may be determined."

In addition, everyone can help by examining concepts, functions, procedures and equipment within his area of primary interest to determine and encourage the tie-in with intelligence. If the supply officer is concerned about delivering the goods to the widely spread units of the command, he must have a lively interest in intelligence. If the communicator wonders how he can bridge the communications gaps between separated elements of the

command, he too, has a vital interest in intelligence. That the fighter-bomber pilot, the engineer and the Ontos commander need timely and reliable intelligence to reduce the uncertainties is so evident as to require no advocate. The tie-ins exist. By acknowledging and identifying them we provide unmistakable indications that everyone should have a comprehensive interest in intelligence activities. The Chinese philosopher, Lao Tse, used the word "intelligence" in a broader sense, but his message applies: "To perceive things in the germ is intelligence." Failure of some units and individuals to perceive things in the germ during Exercise STRONGBACK (Philippine Islands, March 1958) caused the Commanding General, 3d Mar Div to comment during the critique:

"In this problem, the intelligence . . . was not treated with the proper respect—simply because of the lack of individual training. You can't wait until the day before maneuvers. It has to go on constantly in every battalion and company and platoon."

2) Development of an integrated intelligence system to provide timely, reliable intelligence and detailed target information.

Based upon a request from the CMC, the Coordinator, Marine Corps Landing Force Development Activities, Quantico, Va., has commenced a study project "to determine a concept for an overall intelligence system, with included subsystems or agencies, to insure an integrated information and target acquisition capability for landing forces." A large order, fulfillment of which will require considerable creative thought, tempered where necessary by some practical soul-searching. Our current approach to intelligence, which so sorely needs revision, tends to sanction if not encourage development of separate target acquisition systems to satisfy in each case the peculiar requirements of infantry, artillery, naval gunfire and air support. This every-man-for-himself approach to intelligence was somewhat less objectable during WWII. Then, relatively small island objectives and almost complete air superiority permitted our ground elements to adopt tactical formations that resembled a gigantic pheasant hunt in which the firing line advanced shoulder to shoulder with all the precision of the Radio City Music Hall Rockettes. Since then, our operational concepts have changed markedly but our intelligence concepts have hibernated peacefully. Therefore, in the Commandant's words, "It is high time to revaluate the current system and apply such modifications as are necessary to establish."

The Quantico revaluation will include 2 phases: the first, to be completed no later than 30 June 1958, will establish a broad concept of an integrated intelligence system; the second, to be initiated after CMC

BGen Masters graduated from the Naval Academy in 1933 and was commissioned a Marine 2dLt. Among many assignments, spanning over 25 years' service, are the following: ExO, 7th Marines; Asst Chief of Staff, G-2, 1st MarDiv; Commanding Officer, Basic School; CO, 8th Marines; CO, 4th Marines; Member, Joint Strategic Plans Group, Joint Staff, Office of the JCS. From June 1956 to July 1957 he served as FMFPac Liaison Officer to Commander in Chief, Pacific Fleet, and at the present time is Asst Chief of Staff, G-2, HQMC. He was awarded the Navy Cross for action on Okinawa.

approval of results of the first phase, will refine the broad concept and provide a basis for establishment of priorities, research and development, personnel and budgetary requirements. All of the tools of the trade, from the prosaic to the bizarre, will be studied for possible use in one or more stages of the intelligence cycle. From the foregoing it is apparent that the Quantico study project, since it will serve as a conceptional framework upon which our integrated system will be constructed, is an essential feature of the evolution.

Also participating actively in the evolution is the G-2 Section, Headquarters FMFLant, which published a study during February 1958 of the "Integrated Intelligence System of a Marine Air Ground Task Force." This 100 page study, designed primarily as a guide for the conduct of intelligence missions during PHIBEX 1—58, identifies reconnaissance and observation resources currently available, analyzes the means and measures by which the results of reconnaissance and observation efforts might expeditiously reach all interested commanders and estimates the degree of surveillance that Marine forces can now maintain over a modern amphibious objective area.

The picture painted by the study is neither cause for gloom nor jubilation. That we need improved intelligence capabilities the study leaves no doubt. Neither is there reason to question the opinion that we can utilize our present resources to much better advantage. Briefly stated, a vast improvement would result if we used the "lateral pass" more frequently. This procedure requires that all personnel involved in acquiring target information—artillery forward observers, naval gunfire spotters, air observers, supporting arms liaison officers, etc.—in addition to reporting through their parent channels, laterally pass information to the Intelligence Officer at the appropriate echelon. Success of this procedure, like so many others, depends upon training. Only by frequent emphasis will the reaction become automatic.

The FMFLant study should prove helpful not only to the subordinate tactical units for which it was primarily designed but should also assist other headquarters (including HQMC) in developing an integrated intelligence system.

3) Formulation and development of intelligence doctrine and concept responsive to current tactical doctrine.

Hand in glove with the development of adequate target acquisition means is the formulation of intelligence doctrine to specify how these means are to be employed to support our modern operational doctrine. Obviously, it is impossible to examine the *means* of acquiring information without carefully considering the *doctrine* of employment and vice versa. Thus such efforts as those of the Landing Force Development Activity and of FMFLant will contribute significantly to the accomplishment of both the second and third of the Commandant's 5 intelligence objectives.

An example of efforts to establish doctrine in a specialized, intelligence-related field is found in the recently concluded electronic warfare panel, held in the Washington area and attended by officers from various East Coast stations and activities. The representatives, whose current duties and professional background especially equipped them to participate, formulated a concept for the combat employment of Marine air and ground electronic warfare elements and resources. This concept will provide specific guidance for the operations of radio companies, Marine composite squadrons and similar-type units.

In addition, HQMC recently sponsored an Intelligence Symposium, the first of its kind held by the Marine Corps at the Washington level. Seeking answers to the problems presented or implied by the Commandant's objectives, intelligence representatives from major ground and air commands pooled their experience in discussions of those areas requiring immediate attention. Their conclusions should prove helpful to the Commandant in formulating policy guidance to subordinate headquarters.

4) Education programs and schooling to increase intelligence awareness of Marine Corps personnel.

In furtherance of this objective, the staff, HQMC, recently undertook a detailed review to determine the adequacy of the formal schools training program for Marine intelligence personnel. With assistance from FMFPac and FMFLant, the review will inquire carefully into course objectives, syllabuses and outlines, duration of courses, basis or frequency of presentation, school capacities, student input, and numbers of instructors involved. The appraisal will also include an evaluation of the FMF's inherent capabilities to provide the on-the-job training necessary to fulfill their respective requirements for intelligence officers and basic combat intelligence men. Finally, the survey will assess the need for establishment of a formal Amphibious Intelligence School within the Marine Corps.

Formal recommendations will be made to CMC when the survey is concluded.

Meanwhile 11 separate Volunteer Training Units of the Marine Corps Reserve have evidenced continuing intelligence awareness by devoting their regular meetings to intelligence, counterintelligence or language subjects. Of the 11 VTU's, 4 are identified as Intelligence organizations, 2 as Counterintelligence and 5 as Language. The efforts of the language VTU's are particularly noteworthy in view of the Marine Corps' urgent need for a reservoir of linguists capable of communicating directly with our allies and our potential enemies.

Not to be outdone, the Marine Air Reserve Training Command has embarked on an ambitious, realistic 3-year Intelligence training program, which will include practical work on all phases of the Intelligence cycle at both the Regiment/Air Group and the Division/Wing levels.

The efforts described in the foregoing paragraphs, addressed primarily to the professional improvement of intelligence personnel, promise to accomplish only a portion of the Commandant's fourth objective. The obvious goal is to increase the intelligence awareness of *all* Marines through education programs and schooling. An aggressive, forward stride toward this goal is being taken by the Marine Corps Educational Center, which intends to expand the intelligence instructional content of its syllabus for next year.

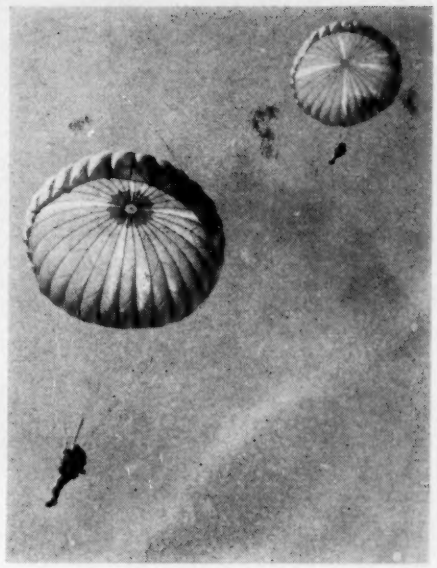
Eventually, every Marine becomes either a student or an instructor. At that time he can contribute actively to the attainment of this objective. But he need not wait for an opportunity to participate in a formal or informal school program: numerous correspondence courses on intelligence subjects are available at the Marine Corps Institute and at Quantico's Extension School. In addition, the US Army Intelligence School at Fort Holabird offers dozens of extension courses on military intelligence. Correspondence course subjects range from Basic Combat Intelligence to Communist Guerrilla Warfare and Scientific Intelligence. Lessons per course vary from 3 to 30, so that the student may select his course with some indication of how much time will be required to complete it.

No one is apt to become a good student or even an acceptable trainee unless he first has a "comprehensive interest in intelligence activities" (Objective #1). Mere exposure to educational processes is not enough.

5) Research, development and field testing of intelligence projects which are responsive to Marine Corps requirements.

This objective takes cognizance of the fact that intelligence collection, processing and dissemination must be geared to a much higher degree of speed and accuracy in nuclear warfare (or the threat thereof) than has ever been required in wars of the past. This focusing of attention on the critical role of intelligence in determining the most economic means of defeating the enemy, points up the necessity of developing suitable equipment for the job. But researching, developing and testing new gear costs money and lots of money. Therefore, the Marine Corps must proceed cautiously in spending its limited budgetary R&D resources. Nevertheless, it is now spearheading a number of projects that promise to facilitate accomplishment of the intelligence task. In addition we carefully monitor the other services' R&D programs and benefit from their efforts. Many classified projects in the battlefield surveillance and target acquisition fields bear promise of enhancing the Marine Corps' intelligence collection capabilities.

Atlantic Amphibious Exercise 1-58, held during March 1958, provided an invaluable opportunity to judge progress on our continuing efforts to develop more effective tools for performing intelligence functions. Encouraging indeed were the results achieved by covertly introduced reconnaissance teams, which utilized special clandestine radios to report information gained in deep (30 miles inland) penetrations of the objective area. A special, lightweight photographic pod, the KA 20, mounted on an OE-2 (observation) aircraft, scored impressive photographic results in minimum time from request to snapping shutters. Also interesting, if somewhat less conclusive, were the demonstrations by 4 manufacturers of the capabilities of their one-man helicopters. Intelligence interest is founded on the belief that one-man helicopters show definite promise of enhancing forward units' zones of surveillance.



Another exciting concept will be tested this summer at Camp Pendleton, when Stromberg-Carlson will demonstrate a new technique for lightning-fast reporting, processing and dissemination of intelligence information. If results measure up to expectations, this item should fit neatly into our plans.

On the debit side of the ledger, progress in the development of a dependable Battlefield Identification System has been disappointing. The challenging problem of identification — basically, separating the friends from the foes — is greatly complicated in the environment of the expanded nuclear battlefield.

The ability of an All-Weather Fighter-Bomber to locate, "lock-on" and attack a target under conditions of zero visibility forcibly indicates the necessity of accurately determining whether the target is friend or foe. Vehicles, helicopters, tanks and people roaming about the battlefield will either be welcome or unwelcome in your command post and their proper reception is exclusively dependent upon reliable identification. Nothing will replace the individual Marine's eyeballs for battlefield identification but with the obvious limitations imposed by weather, conditions of daylight and darkness, etc., we need a dependable system, responsive to battlefield needs under all conditions and at all levels.

The 3-headed spook rears his ugly head again.

The foregoing merely points up the fact that, while considerable has been accomplished or at least initiated toward realizing the Commandant's fifth objective, much remains to be done. Although the scientists and technicians assume primary responsibility for researching and developing new items, ideas and suggestions from common, garden-variety Marines are always welcome and many times provide the missing parts of the puzzle.

It will be noted by all, that the author has given no more than a "passing pat" to new gadgetry, some of which now exists for procurement, others in the test stage only, and still others only on blueprints or in the minds of men. This was not unintentional. An entire article could easily be devoted to this subject or any one item alone. Additionally, the problem of classification, in connection with publication, influences this portion of the picture.

In conclusion, it can be stated that the 3-headed spook becomes less fearsome when we anticipate successful accomplishment of the 5 objectives. But, fearsome or not, uncertainty about the enemy, weather and terrain will always be with us. We can keep uncertainty in its proper perspective by the skillful application of our intelligence resources. The job will always be there: reduce the uncertainty. It behooves all commanders and their G-2 agents to get set up for business and proceed with the search—the search for any and all information that will minimize uncertainty and the spook in question. USMC

★ ★ ★ ★

Qu'est Que C'est?

During the Inspector General's annual inspection of units of the Second Marine Division in 1947, the LtCol conducting the clothing inspection was questioning Private "Broussard," a member of the 4.5 Rocket Battery, and was receiving only perplexed looks in reply. Information was volunteered by the Battery Commander that Private "Broussard" was from the coastal region of Louisiana and didn't understand English too well. The Inspecting Officer informed the Battery Commander that *he* was performing the inspection and then began questioning "Broussard" about furthering his education by taking correspondence courses. Once again he received only perplexed looks and in exasperation he asked "Broussard" if any of the Battery Officers or NCOs had ever mentioned the Marine Corps Institute to him. A smile spread over "Broussard's" face as he replied, "Oh, Yes Sir! I take English from that place."

LtCol G. E. Norris

No Comment

In 1949 the Artillery Battalion, 1st Provisional Marine Brigade on Guam was in the throes of IG inspection. The inspector stopped in front of a young Marine from the southern hill country.

"How many 'tubes' on this weapon, son?" he asked, indicating a nearby 105mm howitzer.

"Three, suh!" was the confident reply.

"Just suppose you tell me *where* they are." The battery officers and staff NCOs stood in horrified silence.

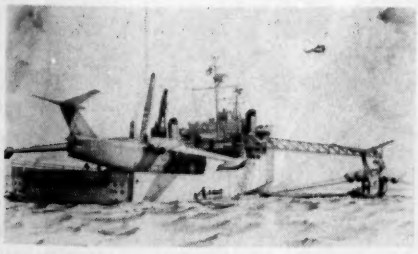
"Sure, suh. Theah's that'n you shoot through, and 2 in the tires!"

MSgt Piatt Koch

US Navy's latest anti-submarine weapon is a rocket-propelled torpedo.

Designated RAT, the torpedo incorporates a rocket for initial launching, a stabilizer pack with parachute to slow missile for proper water-entry speed, a sound operated homing torpedo, all held together by an airframe. The new weapon enables a destroyer to strike at a submarine before the undersea craft can escape or attack with its own torpedoes.

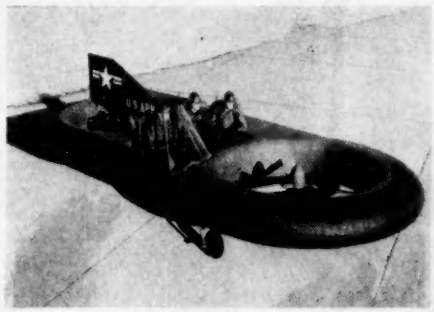
The Navy has released this artist's conception of a new-type seaplane tender, which has been designed primarily for support of the P6M Martin SeaMaster. A converted WW II



type of vessel known as the Landing Ship Dock (LSD), the new tender has been scheduled as part of the 1959 shipbuilding and conversion program. All supplies required to keep seaplanes operational, including replacement personnel, maintenance shops, ammunition and fuel, are housed on the tender. Side booms will enable the tender to accommodate aircraft alongside for replacement and repairs while afloat. Its stern can be submerged so that aircraft can be floated into a well for drydocking.

Extensive ground tests of the Piasecki 59K VTOL have been conducted to determine thrust efficiency, stability and control characteristics.

The 59K VTOL is a radical departure from previous VTOL (Vertical Take-Off and Landing) designs. All major components — dual engine powerplant, rotors and controls —



are housed compactly in the flat, low chassis, thus eliminating the large overhead rotor of the conventional helicopter and greatly simplifying the drive assembly.

Lift is derived from 2 horizontal 3-bladed rotors, one at the front and one at the rear of the machine, just 3 feet above the ground. The operator's seat and passenger compartment are in the center section between the rotors. The rotors are completely shielded on all sides, an important new safety design feature. The entire chassis is supported on 3 wheels to provide ground maneuverability.

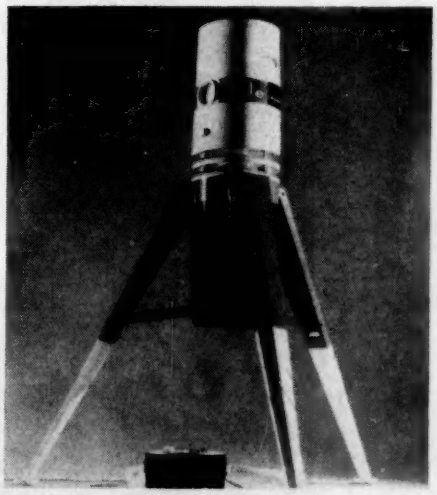
The Navy will launch the *USS Independence* (CVA-62), its fourth *Forrestal*-class aircraft carrier, on 6 June 1958, at the New York Naval Shipyard. The 60,000-ton aircraft carrier will be christened by Mrs. Thomas S. Gates, Jr., wife of the Secretary of the Navy.

The *USS Independence* will become waterborne by flooding her building site, eliminating the many hazards that are incurred in launching a ship of her size in the normal manner of sliding down the ways.

Powered by 200,000 horsepower engines, the *Independence's* speed reportedly will be in excess of 30 knots. When she joins the fleet, the ship will carry a crew of 3500 officers and men.

The carrier's air striking power will be concentrated in her 100 high speed jet aircraft. Four steam catapults will give the ship the capability of launching 32 jet aircraft every 4 minutes.

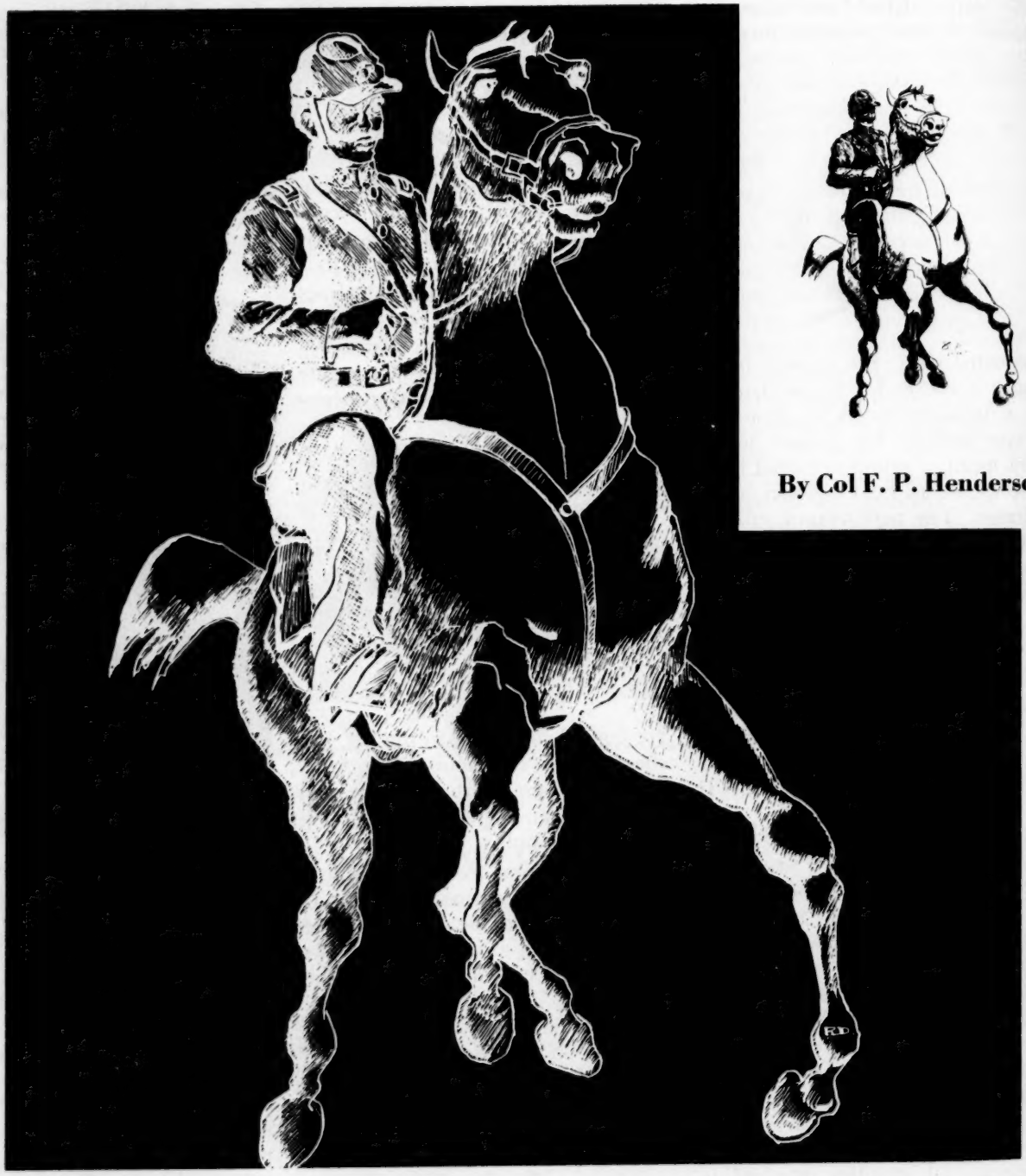
A gyro compass field instrument capable of automatically determining true north with remarkable accuracy, and saving time, manpower and equipment has been developed by the Autonetics division of North American Aviation, Inc.



Designated ABLE (for Autonetics Base Line Equipment) the direction findings, ground-based device operates in all weather, day or night. Aiming and calibration problems normally can be solved with transportable ABLE by inexperienced personnel in less than 30 minutes at 30 degrees latitude or one hour between 60 to 70 degrees latitude.

The portable field instrument, weighing less than 70 pounds and using a minimum of power, can be assembled in 15 minutes.

the return of the
Man On Horseback



By Col F. P. Henderson

The basic essentials of command in modern combat call for the return of the real military commander, not bigger and busier staffs

THE CIVIL WAR WAS THE ULTIMATE flowering in the evolution of the art of personal command—both good and bad. Perhaps this is why today's professional soldier has become an avid reader of Civil War histories and biographies. It is his escape literature—escape from the dreadful managerial position he finds himself in. In its pages he can mount his horse, look like a commander, think like a commander and feel like a commander. He can fight with a sword instead of a pencil. He can lead fighting men instead of boards, panels and ad hoc committees. His intense admiration for Civil War leaders is reassuring proof that his soldierly instincts of command are still sound, although atrophied from disuse.

WWI saw the beginning of the decline of the individual commander as the architect of victory or defeat. In his place we substituted the anonymous staff. Staffs, rather than commanders, began to control the raw materials of command. Staff officers received the information essential to command, made the estimates, determined possible courses of action and made plans. The historical type of military commander gradually began to be replaced by a military chairman-of-the-board. His new role was to announce approval or disapproval of actions proposed by his staff. The higher the command echelon, the more pronounced was the disappearance of the true commander.

This trend, firmly established by the end of WWI, gathered momentum in the next 2 decades. It ended up by taking the commander off his horse as the personal director of combat and putting him in a chair in a command post. There he could better be served by his staff and his ever increasing communications, so the theory ran. In actuality, he became the prisoner of his staff, dependent upon them for second hand information on which to base his decisions.

Thus we fought WWII and Korea. And pretty dreary wars they were too. They produced precious little from the standpoint of commanders or battles that would make vivid history for the professional soldier, a hundred years hence, to turn to for inspiration or guidance. There were fitful flashbacks to the old order of brilliant individual command leadership in the North African desert, Europe, the Pacific and the first year in Korea. But by and large, battles and campaigns had the monotony of mass destruction rather than the distinctive beauty of master craftsmanship.

For the genius of the great commander, or even the high skill of the good professional soldier, we substituted the drab sameness of staff solutions. A staff instinctively shuns taking great risks, even if they offer the promise of dazzling prizes. Instead, it invariably adopts a safe solution, even if the reward is far less. This is inevitable because a staff solution is always a compromise solution, arrived at in conformity with the established, conservative orthodoxy of field manuals, staff manuals and SOP's.

To be sure, there were reactionary individuals of the field soldier type (many of them in the Marine Corps) who rebelled against this degradation of the commander and this new method of remote and corporate control of combat. But the dice were loaded against them by the always articulate theoreticians of warfare. While paying lip service to the commander as the final repository of command decision, their school solution for success in peace or war resided in staff organization and operation. In some circles, staff duty came to be looked upon as a surer road to promotion and fame than command duty (and often was, sad to relate).

Veteran professional staff officers would declaim that a good staff was really more important than a good commander. They urgued that a good staff could make any command look good, but that a poor staff could drag the best commander down to mediocrity. They were fond of supporting their arguments for staff supremacy by quoting Jomini—"A good staff has the advantage of being more lasting than the genius of a single man." (A command-oriented man might have called their attention to the case of the II Corps, Army of Northern Virginia. D. S. Freeman said it had a good and "competent staff" when it took the field in the Spring of 1863. After Jackson's death in May it was never more than just another corps.)

It cannot be denied that the command and staff organization and methods we have been using for some 4 decades have produced ultimate victory—though long in coming and costly to achieve. Perhaps they even had some appropriateness for the kinds of wars we fought. But are they suitable for warfare as we visualize it in a modern amphibious assault?

For Marine commanders there is a promise of better things to come. These derive from a truly splendid fringe benefit of our modern amphibious doctrine which so far has escaped recognition. This benefit is the hope of restoring battlefield commanders to a position of preeminence as individuals in determining the outcome of combat.

About the only nice thing a soldier can say about the atomic munition is that it has restored some of the classic conditions of combat. In place of the congested battlefield of the past in which a commander could only bludgeon his way ahead, he now has space. Space which will allow commanders at all echelons to practice that almost vanished art of their profession—maneuver. Deception, concealment and surprise are restored from their abased state to a position of utmost importance. Above all, speed is mandatory—speed in conception, speed in planning, speed in decision, speed in execution, speed in movement and speed of reaction to the enemy's actions. Original and bold command action must replace stereotyped school solutions. These are basic essentials of com-

mand in modern combat.

These essentials call for the return of the real military commander, not bigger and busier staffs with more clerks, typewriters and mimeograph machines. They desperately need men who can make command decisions without waiting for the deliberate digestive processes of staff action to produce staff manual-correct solutions for them to approve. From the lowest to highest command echelon there is a need for the skilled professional soldier who can run his own battle—with assistance from his staff, but without utter dependence upon it. The situation calls for the return to the battlefield of the man on horseback breed of commander. Are we ready to provide good ones?

While the Marine Corps drank too long and deep of the potions of the staff medicine men, we are fortunate that our sturdy traditions of personal command have survived the cure, although dangerously weakened. Now is the time to cast off practices alien to true command leadership and give it fresh vigor and meaning. A good place to start such a renaissance is in the present doctrines of staff organization and operation.

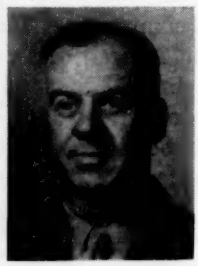
For far too long we have gone along without questioning whether this foreign adoption is best for the Marine Corps. It is long overdue for a searching re-examination because the conditions, weapons and equipment of war have changed drastically since we adopted it. What we have today is but little changed from what we hastily adopted in WWI. Militarily naive and immature when that war came upon us, Gen Pershing and the Army borrowed from our allies the staff organization and procedures they had evolved to fight the siege warfare of the Western Front. As part of the AEF the Marine Corps borrowed from the Army.

Since WWI we have made quantum jumps in firepower, mobility and communications, but are still using the same basic forms of staff organization and procedure. It could be that we need a quantum jump here too. We have never really tried to make one. What we have has been enshrined in staff manuals so long that it has become dogma with force of Holy Writ. Those who may question its rightness are branded as heretics. Dogma may have a place in religion, but it has inevitably led to disaster in battle.

Working under the inflexible rules of our staff dogma we now give every commander the same form of staff organization. From battalion to corps, in combat or service units—whether air or ground—we unquestioningly maintain a rigid uniformity of staff organization and operations. We make only minor concessions to the fundamental fact that the infantry battalion and the service battalion are vastly different; that the infantry regiment, the aircraft group and the force service regiment operationally have little in common when committed to the amphibious assault; and that all of these face a different order and magnitude of command and staff problems than are present at the division, wing and amphibious troop level.

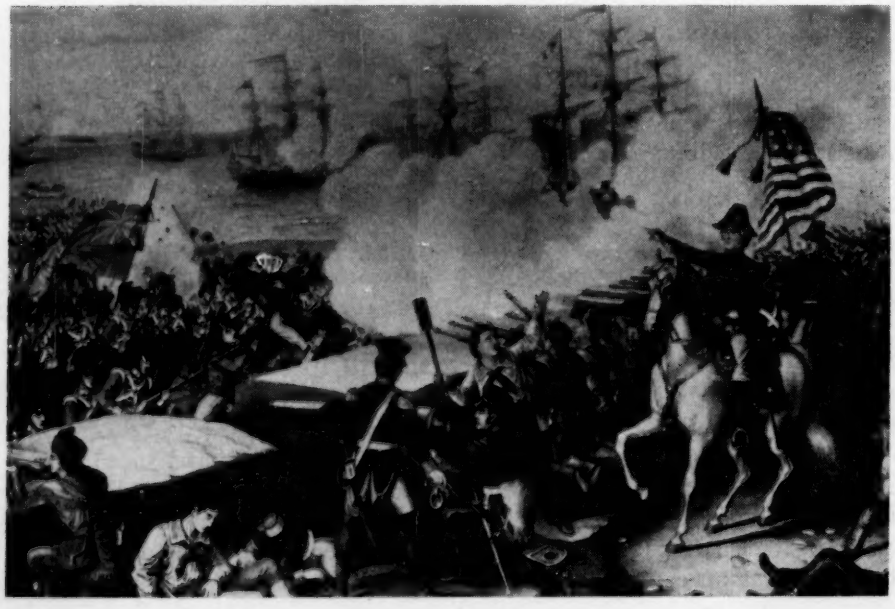
The time has come to take our modern doctrine and analyze it to determine the nature of the command problems that will face FMF commanders of every echelon and every type of unit on the beachheads of today and the future. Then we can organize staffs and establish staff procedures that will truly meet the needs of the commander of each type of unit and at each echelon of command. Through proper emphasis on command, as opposed to management, we can restore to our leaders the full stature of battlefield commanders. Where the commander truly needs to be a modern man on horseback, we can give him a staff that is organized and operates to meet such needs. Where his responsibilities are those of logistic and administrative support, we can give him a staff that is organized for that task, rather than a pseudo copy of a tactical staff.

To fully capitalize on this re-emphasis on personal command, we must reduce the size of headquarters at all levels in both personnel and impedimenta. Despite our self-lauded American genius for efficiency in executive organization and management, somehow or other we seem to require more men and equipment to accomplish any given military com-



Col Henderson was commissioned in the Marine Corps in 1935. Stationed at Pearl Harbor when WWII erupted, he later served in the following campaigns: Guadalcanal, Bougainville, Guam, Peleliu and Okinawa. Some of the Colonel's more recent assignments have been: G-3, FMFPac; CO, 11th Marines, Korea; Advanced Research Group; FMF Organization and Composition Board. At present he is Head, Development Branch, G-4, HQMC.

Gen Andrew Jackson at the battle of New Orleans



mand task than do the armed forces of any other nation. We have reached the point where the command element of any unit is usually the least mobile and most conspicuous element of that unit on the battlefield. This must be reversed. The command element must have the same or greater mobility than its subordinate elements. If it is to survive, it must be inconspicuous to all of the enemy's intelligence gathering media. A searching look into what men and equipment are necessary to command on the battlefield, as opposed to those required to administer, is necessary. More than this minimum cannot be tolerated.

Concurrent with a restoration of the art of personal command to the battlefield, there must be a reorientation of our officer training at the intermediate and higher levels. Our woeful lack of an adequate number of trained staff officers in WWI caused great emphasis to be placed on staff training in the military education and training system during and after the war. This emphasis has gained continual momentum in the years following. We have Command and Staff Schools and we have Staff Colleges. They teach little of command, but much of staff. They even have had short courses which teach in great detail the duties of each particular staff billet. But oddly enough, we have no Command School or Command College.

A modern military staff is essentially a bureaucracy. Because our military education system is staff oriented, much of a student's instruction is centered about the timeless totems of any bureaucracy—form, technique, protocol and jealous preservation of domain or prerogative. Modern staff theorists argue as violently about the proper format and content of orders, or the division of responsibility among staff sections, as did theologians of old on the question of how many angels could stand on the head of a pin. Students are dutifully impressed with the sanctity of duties, procedures and formats as prescribed in staff manuals. Staff experts, teaching in staff schools, inevitably tend to increase the scope and importance of their calling. In the delicately balanced commander-staff relationship, this can be done only at the expense of command.

A commander's need for a staff is in no way diminished by modern combat conditions and doctrines. It is essential that our military education system continue to give high caliber staff training to all officers. But it is of the utmost importance that such staff training be related to the realities of the nature of ground and air combat and administrative support today and in the future. Indoctrination in rigidly uniform formal staff procedures and techniques, based on the needs of conscript armies in land warfare, must yield to something more suitable to the tempo and demands of a modern amphibious assault conducted by a professional force-in-readiness.

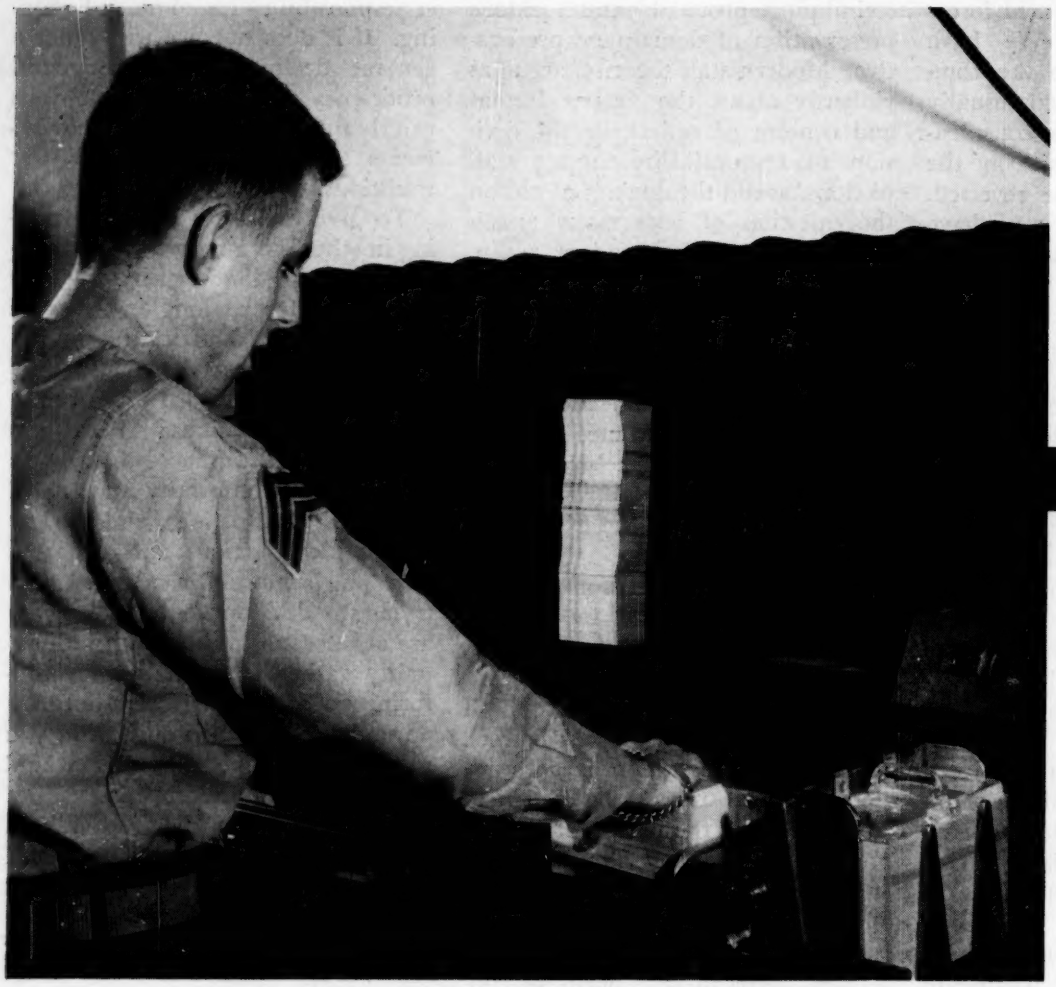
Training in command is more crucial than ever for success in combat at all echelons. With opportunities to command in the FMF becoming seemingly less frequent, especially for field grade officers, the educational system must assume a greater responsibility for command training. If it does not, we will suffer a general decline in the command proficiency of our officers. This is utterly unacceptable for our requirements and incompatible with our traditions.

To give realistic command training in schools is a most difficult problem. Perhaps that is why we have avoided it for so long in favor of staff training. Staff training is a natural for the usual pedantic educational methods. It provides written-on-paper submissions which can readily be graded in accordance with field manual conformity and school solutions. But to judge and grade a commander's actions and decisions is a much more difficult task. In trying to develop commanders you are at once confronted with individuality rather than the group uniformity of a staff. If it were not such an embarrassment to deal with, you might even hope that you would frequently encounter military genius. Commanders can be individuals, "characters," even geniuses. Staff officers must submerge such traits and be Organization Men. Characters and geniuses upset smooth staff teamwork.

To train and teach officers to be professionally skilled commanders and staff officers under modern conditions of warfare is a must. We must see to it that our military schools do this in a realistic and effective manner. To do so will certainly require extensive changes in our methods of military education.

After the uninspiring methods of warfare that have prevailed so far in this century we are on the threshold of a new and more invigorating era. Once again the battlefield calls for the commander who personifies the legendary man on horseback. There is an urgent need for individuals who possess all the qualities and training required to lead and command. The need for a new concept of staff support to such commanders is equally great.

The Marine Corps has a well-earned reputation for pioneering military innovations of basic worth and enduring value. There is no more appropriate place to focus this talent at the present time than on the problems of command and staff created by modern warfare. USMC



Casualty information fed into electronic machines

ELECTRONIC "CASUALTY COUNT"

The Marine Corps has focused attention on salvaging its most valuable asset — manpower. One exercise, "Operation Red Cross" staged in Japan was devoted solely to perfecting casualty evacuation and treatment techniques.

The maneuver was played in phases designed to act out and place under clinical scrutiny every step in the evacuation chain. Tactical maneuvers were not exercised. This permitted all available men to study and practice modern evacuation and "buddy aid" on a mock conventional or atomic battlefield.

In these exercises, which emphasized rapid movement of medical facilities and casualties by helicopter, a new electronic means of reporting and recording casualties was tested.

Each Marine wore, with his old style "dog tag," a card containing electronic punch card data. When he was theoretically wounded and evacuated through front line stations to modern medical facilities in rear areas or to hospital ships off shore, information from his card was fed into electronic accounting machines.

The machine automatically turned out reports listing wounded and including such information as type of wound, prognosis and aid station or hospital where treatment took place.

"Buddy aid," (first aid by fellow Marines), was stressed as a basic tenet of casualty-handling in the atomic age. Each man is trained to administer this basic medical assistance to his buddy.

nulated atomic casualties lifted aboard a hospital ship

Assuming roles of casualties, men are on way to helicopter

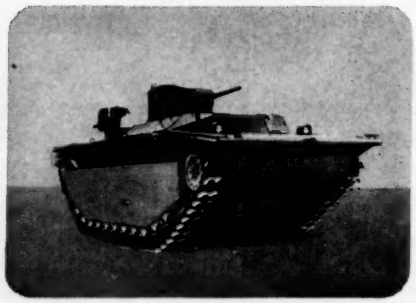
Adding realism to the exercise, a mock operation

...speaking of

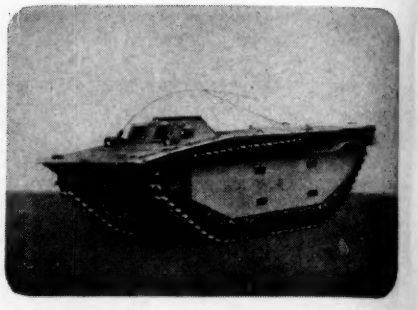
Missile Ground Support **MOBILITY**

HERE'S WHY FMC CAN

1941...LVT 1
Amphibious Personnel-Cargo Carrier

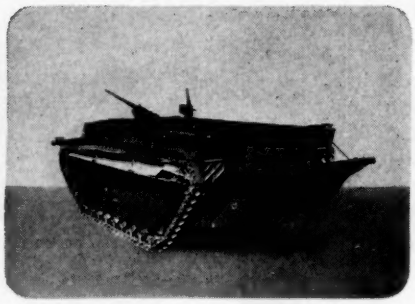


1942...LVT (A) 1
Amphibious Armored Assault Vehicle

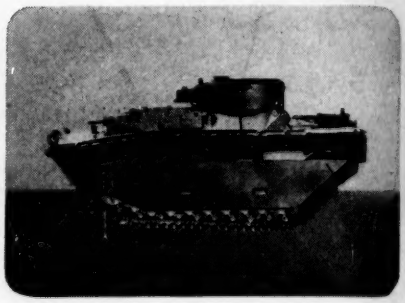


1942...LVT 2
Amphibious Personnel-Cargo Carrier

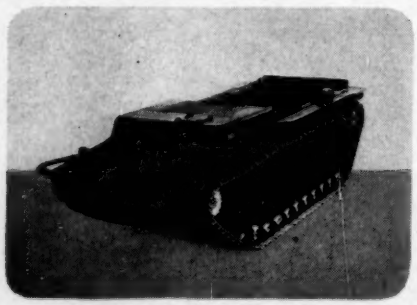
1943...LVT (A) 2
Amphibious Armored Personnel-Cargo Carrier



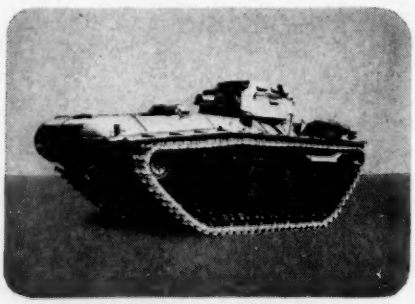
1944...LVT 4
Amphibious Personnel-Cargo Carrier



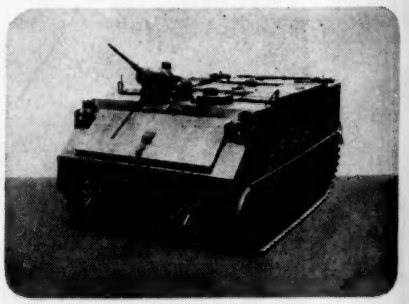
1944...LVT (A) 5
Amphibious Armored Assault Vehicle



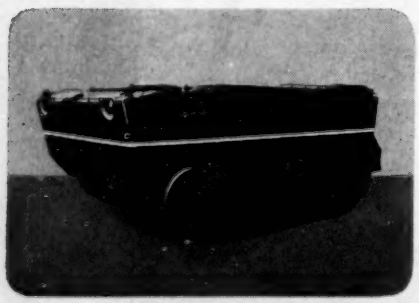
1945...LVT 4 Lightweight
Amphibious Personnel-Cargo Carrier



1949...LVT (A) 5 Modified
Amphibious Armored Assault Vehicle

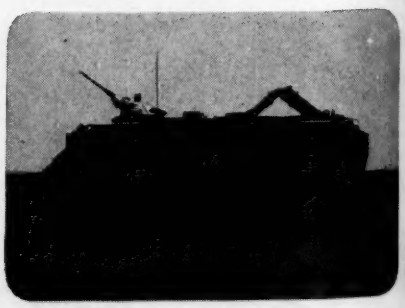


1951-1958...M59
Armored Personnel Carrier



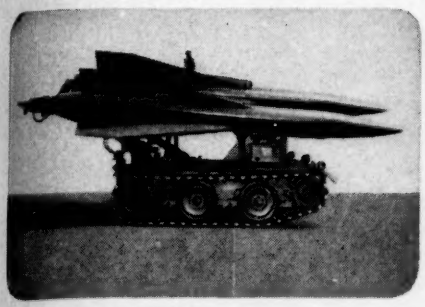
1954...LVT P6
Amphibious Armored Personnel-Cargo Carrier

1956...LVTR-1
Modified Vehicle for recovery duty

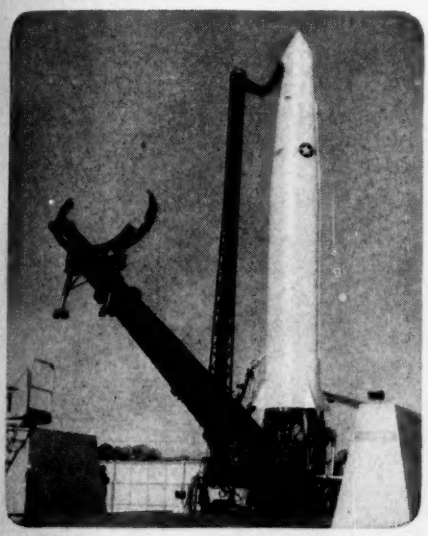


1957...M-84
Mortar Carrier Vehicle

HANDLE MISSILE LAUNCHER PROGRAMS



1957...HAWK
Mobile loader Vehicle



1958...THOR
Transporter-erector Launching Mount & Power Control Trailer

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"Nowhere Yet Everywhere"

By Maj A. H. Sollom

STUDENTS OF MILITARY HISTORY are sometimes bemused upon discovering what appears to be, at least on the surface, a strange paradox. That of a strong, well-equipped, well trained army being unable to cope with an irregular force which may sometimes be composed almost entirely of poorly equipped civilians with little if any regular military training. This happened to Napoleon in Spain and later in Russia. The Japanese in WWII were never able to fully control the Philippines even though all regular US units had been defeated. The Germans in the Second World War had more than their share of this irregular warfare; in Russia, France, Italy, Norway and in the Balkans armed civilians rose to thwart their operations.

The partisan has made his appearance innumerable times through the past ages and we are indeed in error if we assume that he will not be on the fringes of the battlefield in future conflicts. Whether our aim is to utilize friendly partisans in conjunction with our own operations or to protect ourselves from the actions of enemy partisans it is necessary to understand just what this pseudomilitary man is, why it is possible for him to successfully combat regular forces and what types of operations he is capable of accomplishing.

The partisan movement is like a hot house plant which blossoms only under the most exact conditions. Civilians do not ordinarily desire to disrupt the pattern of their day-to-day living with the violence of mili-

The ambush, the sudden surprise-attack upon a moving enemy, is the forte of the guerrilla. He does, however, have definite limitations

tary conflict. Let us say then that there must be a motivating force which will cause a wide-spread spirit of resistance to the extent that the majority of the population will support the partisan group if not joining its active membership. The force which most often comes to mind in this respect is an invasion of an area by a foreign power such as occurred when Napoleon invaded Spain and when, in more recent times, Hitler overran Norway. However, an equally effective motivator can be political or revolutionary, such as is occurring at the present time in the far east.

The Chinese Communist leader, Mao Tse-tung, no amateur in this field, once wrote a pamphlet, *Problems in Guerrilla Warfare,* in which he asserted: "If guerrilla warfare is without a political objective, it must fail; but if it maintains a political objective which is incompatible with the political objectives of the people, failing to receive their support then this too must fail. This is the basic reason why guerrilla warfare can only be a form of a revolutionary war and why it cannot be utilized by any kind of counter-revolutionary war. This is because guerrilla warfare is basically organized and maintained by the masses, and once it is deprived of these masses, or fails to enlist their participation and co-operation, its survival and development is not possible."

If a country is ripe for the formation of partisan bands, in that the bulk of the people will support them, who then are to become the active members — the doers so to speak? If a person has much to lose from taking certain actions he will logically refrain from doing them, therefore, we find that the more wealthy members of the community are more content to support the partisan movement in a covert role, if at all. It is those who have nothing to lose who ordinarily become the active members. The peasant farmer, the poorer rural dweller are in this category. These are general statements; it would be inaccurate not to say that there are idealists and patriots among the wealthier classes who are willing to risk all for their country or for an ideology. Former soldiers may also take an active part in the movement. No matter from what source he springs, the active partisan must have the willingness and courage to face death and extreme hardship.

From these active groups of doers it is natural that a few individuals will appear as leaders to control the actions of the majority. They may not be the best qualified, the most moral or the most intelligent, but in the rough and tumble world of the partisan band it is safe to say that they will be the strongest and most determined.

Magilis guerrilla — WW II

Consider the partisan leader Páez, who can be ranked second only to Bolivar himself, in South America's struggle for independence. Here was a man who could neither read nor write but in spite of this, as well as a complete lack of military training, by the age of 20 he had gathered around him a formidable force of irregular cavalry, recruited from the wild Llaneros, whose home was the vast Venezuelan grasslands. His men revered him and performed impossible tasks for him because he was as wild and untamed as they. Páez would compete with them in their violent sports and emerge the winner. On the battlefield he was the most fierce of all—charging madly into the fray, he would hack away at the enemy until he fell, covered with the blood of his foes, in the throes of a sort of epileptic seizure. This same man later rose to the presidency of the Venezuelan Republic, but at the time he was engaged in guerrilla warfare he rode at the head of his band because he was the strongest among men who regarded physical strength as a virtue and also because he possessed the cunning of a predatory animal ranging through its native habitat.

The leader of the partisan band maintains control through inflexible discipline and often by the ruthless elimination of the opposition. The biblical axiom: "Those who are not with me are against me" could very well be applied to the attitude of the partisan leader. Until the leader appears to direct the will and determination of the group into positive action there is no real, effective partisan movement.

The national spirit of resistance, the formation of active bands and the emergence of leaders, all of which we have discussed briefly, might be termed "human factors" in the growth of the partisan movement. Another factor which influences the formation of these irregular forces is that of terrain. Because of partisan limitations, which we will discuss later, favorable terrain must be available in which the partisan force can carry out its particular type of warfare. If such terrain is not available, the partisan may be ferreted out and destroyed. In rural areas will be found terrain suitable for partisan groups organized to

Maj Sollom enlisted in the Marine Corps in August 1942 and was commissioned in June 1943. Among his assignments during the last 16 years are the following: Company Commander, 1st Bn, 1st Marines, Okinawa and China; I&I, 16th Special Inf Co, Duluth, Minn.; Student and Instructor, Junior Course, MCS, Quantico, Va.; ExO and S-3, 3rd Bn, 3rd Marines; Asst S-3, 1st ITR. During the Korean War he served as a Company Commander in the 1st MarDiv. The research for this article was done while the author was instructing in Anti-Guerrilla Warfare, MCS, Quantico, Va.

conduct "open" military activities.

During WWII the Russian partisans would operate from bases located in swamps such as those near the Narva River. The only access to these strongholds was by following paths constructed below the water level or by the use of swamp skis which closely resemble snow shoes in giving the wearer the ability to traverse spongy surfaces common to swamps.

The communist sponsored partisan forces which were such a menace in Greece following WWII had their strongholds in the Vitsi and Grammos mountains and it was not until these bases were destroyed in the summer of 1949 that the partisan movement in Greece collapsed.

There is at the present time a communist partisan force operating in Malaya. The groups belonging to this force carry on their activities from bases well hidden in the jungle where concealment is plentiful and good roads are scarce.

Large cities provide suitable areas for the activities of partisans engaged in actions which are not usually considered military in nature. Perhaps the activity of the French underground in Paris in WWII is the best example of the utilization of this type of "terrain."

A third factor in the growth of partisan forces is that of supply. There must be food, shelter and tools of war available to the partisan. His food is usually obtained from the civil population which supports his actions and is in sympathy with his intentions. If this food is not delivered voluntarily, the civilian may be forced to provide for the partisans' needs. However, such action by the partisan may alienate the civil support the partisan needs if he is to flourish.

In favorable climates his needs for shelter may be few, a cave or a lean-to may suffice, but under less temperate conditions he must again turn to the civilian supporter for assistance.

The arms, ammunition and other tools of war required by the partisan may come from raids on enemy installations, battlefield salvage and from external sources. The partisan may operate small factories for the manufacture and repair of weapons and equipment.

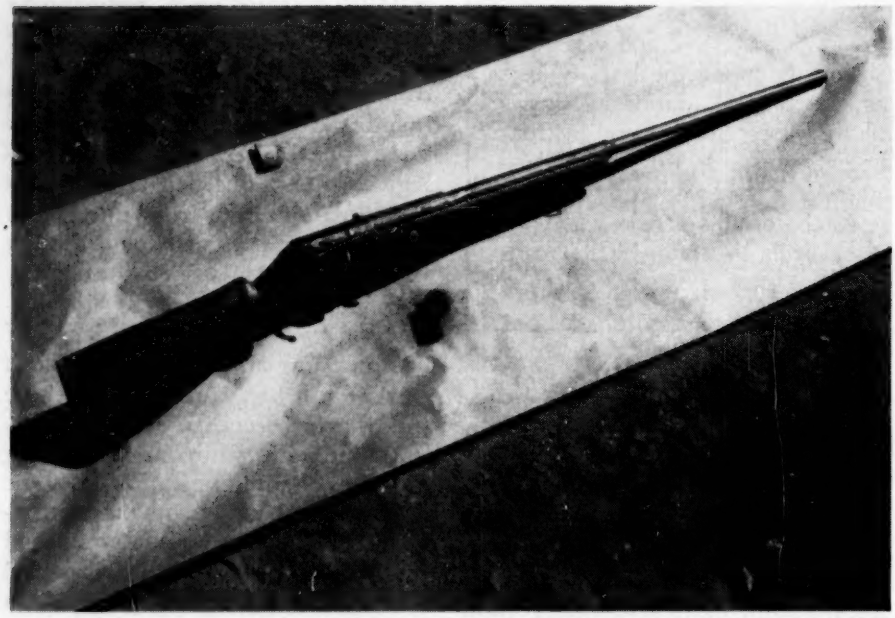
The final factor is that of outside support. The full potential of a partisan movement is seldom realized until it receives assistance, particularly along logistical lines, from external sources. England in supporting the Arab partisans in WWI is said to have spent about 10 million pounds to keep the movement alive and effective. This outside support may also include providing personnel to assist in the training of partisans in a variety of military subjects. Advisor teams may be provided to assist the partisan commander in military and technical matters and also to co-ordinate the partisan operations with those of an outside, regular force. Perhaps the most publicized and best known of these advisors was the controversial figure of Col T. E. Lawrence who guided and advised the Arabian tribes in their activities against the Turks in WWI.

Now that we have an idea of the source of the partisan forces and under what conditions they form let us examine what their characteristics are, or perhaps we might say, what their strengths and weaknesses are. First we will look at those characteristics which contribute to their capability of carrying on their operations.

Partisan forces usually operate in rear areas where regular forces are least prepared, equipped or trained to combat them. German officers in WWII who were unfortunate enough to become involved with the Russian partisan found that their troops had difficulty defending themselves against this type of warfare. The effectiveness of these irregular operations had been underestimated and even front line troops who were well trained for orthodox warfare were lacking in the experience and training necessary in anti-partisan warfare. This lack of training was an even more serious weakness when present in those troops who occupied rear area installations and who operated along the lines of communications as these are the usual targets for partisan attack. Partisans are usually formed into numerous small units dispersed over a wide area. In other words in depth.

Another characteristic contributing to partisan success is that the partisan is most often native to the area in which he operates. This gives him 2 distinct advantages. First, when he is not fighting, he may blend in with the surrounding population which is also composed of natives. This gives him a perfect disguise. US Marines who participated in the Pohang Guerrilla Hunt in Korea in the early part of 1951, are aware of the difficulty encountered in the differentiation of the North Korean partisan from the South Korean civilian. The second advantage gained in being native to the area of operation is that the partisan will have an intimate knowledge of the terrain in which he operates. He will be able to move swiftly through apparently impassable terrain because he will know the hidden trails. He will be able to exist in arid areas for he will know the hidden water holes. The hiding places, the shelters, springs, rivers and trails are all known by him and secret from the outsider.

As we said earlier, one of the factors contributing to the development of a partisan movement was the presence of suitable terrain in which to operate. We include in such terrain: swamps, mountains and forests where mobility is limited to movements on foot and in light vehicles. The fact that the partisan operates in such terrain will be to his advantage for in an environment of this nature the regular forces lose the use of their vehicles



Home made guerrilla shotgun made from pipe

and artillery as well as the ability to mass superior numbers. In essence, the terrain reduces the better equipped, better trained and better armed regular force to a level where the partisan is its equal. It has been estimated that approximately 5,000 communist partisans in Malaya are being hunted by 230,000 regular soldiers and police, a seemingly overwhelming majority, but the jungle is the equalizer. In this jungle it takes 1,000 man hours of patrolling to make one contact with the partisans and 1,500 man hours for each partisan killed. In open terrain the future of these partisans would be something less than secure.

Another characteristic which lends to partisan success is that the partisan has the support of the civilian population in the area of operations. As Mao, the leader of the Chinese Communist government, has stated, the people are the water in which the partisan fish swims. If the water becomes unhealthy the fish will die. The partisan, although he may at times assist in some of the work carried on in the community, cannot be considered as one of its self-sufficient or even contributing members. He is, therefore, dependent on his civilian supporter for his food and shelter. Because the civilian populace is willing to provide the partisan with the necessities of life, he is able to travel about without being too much concerned with a great many of the logistical problems which are always with the regular armies. Also, the partisan in his isolated stronghold has, in the civilian population, a ready made outpost and intelligence system. For whom does the civilian of an invaded country normally have a feeling of sympathy and loyalty? The invader, or his own relatives, friends and countrymen who compose the partisan force? The answer is obviously the latter. Because this is true, almost every civilian is a potential intelligence agent combined with an early warning system. It would be almost impossible for an enemy force to pass through such a community without the partisan learning every move perhaps even as it was taking place.

Russian partisans operating behind German lines were capable of moving as far as 45 miles in a day's time. Such a capability was not unique to the Russian partisan, it has been a characteristic of most partisan bands regardless of nationality. Irregular, partisan-cavalry, active against the Spanish in the South American revolutions, had the amazing ability of covering over 100 kilometers in 24 hours, which compares favorably with the mobility of modern mechanized units. How is such desirable mobility attained? Partisan forces are lightly armed. It is seldom that they will have artillery, tanks or other cumbersome weapons which would decrease mobility. The partisan force is organized into small units which travel rapidly and independently through the country with the ability of converging on a target, striking a strong blow ("un golpe terrífico" the Mexican partisan Poncho Villa termed it) and once again dispersing, a capability of more than passing interest in this age of nuclear tactics.

The partisan's characteristic which is the most important contributing factor in the success of his operations is the ability to conduct operations which achieve surprise. The partisan failing in this ability to achieve surprise would cease to be a problem, for then the regular force would be prepared to meet and defeat him. The partisan, however, does have this capability. If you know the enemy's movements, if you know the features of the terrain and if you can move your forces rapidly to a point of concentration and just as rapidly withdraw and disperse, you should be able to achieve surprise. As we have previously discussed, the partisans have all 3 of these abilities: intelligence sources, knowledge of the terrain and great mobility, all of which contribute to the major capability—that of achieving surprise.

These have been characteristics which contribute to the capabilities of the partisan forces. While most publicity and discussion is about the successes which partisans have achieved, these irregular forces have some definite limitations in their operations. Let us now look at some of the characteristics which limit the scope of the partisan in his operations.

The partisan force springing as it does from the civil population, may be composed of individuals who have never had any formal military training. It is also possible that a partisan leader, who maintains his position through the strength of his personality backed up by the strength of his arm, will be the most ignorant of all. A lack of instructors and training literature may prevent the remedying of this situation. Also there may be a lack of training facilities as well as the inability to muster the number of partisans necessary to conduct anything but small unit training. For such a group of military "amateurs" to challenge a regular force in anything but a hit-and-run engagement would be to invite disaster.

Modern warfare requires the employment of many tools which are not available to the partisan for his use. He may not be able to get

them and, indeed, his type of warfare may preclude his using them. Then, too, there is the problem of procurement of the trained personnel required to operate these technical tools of war. Tanks, artillery, aircraft, vehicles and heavy equipment are some of these implements of modern warfare not available to the partisan.

Another characteristic which limits the partisan in the scope of his operations is his inability to concentrate a large force for extended periods of time. The partisan in massing his troops becomes himself a lucrative target for attack. The regular force, instead of being faced with small units in great depth, now has something tangible to attack with its superior numbers, armament and equipment. Because the partisan force lives off the civilian population and has little capability of transporting supplies, it may be difficult for the partisan supporters in a local area to provide the necessary shelter and quantity of food for a large group for an extended period.

The members of partisan bands have signed no contracts or enlistment papers, they are truly volunteers who have joined because they want to fight, however, if they do not feel like fighting tomorrow they may not be available. The members may decide to go home and help with the harvest or to visit the old folks; so the partisan commander, unless he has unusually strong control, may find his muster rolls vacillating with the season and with the whims of his command. The fact that the majority of the members of a particular band may be from the same community can result in a particular sensitivity to casualties and defeats. T. E. Lawrence, in his book, *The Seven Pillars of Wisdom*, makes a statement which not only demonstrates this point but also describes the delicate relationship which exists between the native partisan and the alien advisor. He states, "To me an unnecessary action or shot was not a waste but sin. I was unable to take the professional view that all successful actions were gains. Our rebels were volunteers, individuals, local men, relatives, so that a death was a personal sorrow to many in the Army."

Gen MacArthur in order to sustain the courage of the partisan forces resisting the Japanese in the Philippines reiterated at every opportunity that he would return to those islands and that the efforts of the partisans were not in vain. "I shall return" became a famous slogan which was not only broadcast by radio but which also appeared stenciled on the boxes of supplies which were surreptitiously delivered to the partisans by aircraft, submarine and small boat.

Perhaps the greatest limitation of all in the success of partisan operations is in the very nature of "guerrilla" type tactics. Partisans cannot, by themselves, employing these tactics alone, defeat a determined regular army. They may help regular forces win wars, but unless they drop their guerrilla tactics and fight as a regular army they cannot force a decision. When the partisan does quit his guerrilla tactics, and stands and fights, he no longer presents a special problem as he can then be defeated by regular forces much better equipped, trained and commanded to conduct normal military operations. Mao Tse-tung has expressed this opinion regarding the relationship of regular tactics and guerrilla tactics: "Although guerrilla warfare may occasionally become the chief

Philippine guerrilla scout — WW II

Marine scout and sniper in Korea

form of operation in the entire anti-Japanese war, it is the general chief form in the rear of the enemy. But taking the war as a whole, regular warfare is undoubtedly the main and basic form and its strategical role is decisive, whereas guerrilla warfare is its auxiliary."

Considering the characteristics, or strength and weaknesses, we have just examined, what then is the partisan capable of accomplishing? The operations conducted by these irregular groups can be placed into 2 major classifications: Covert (clandestine) and Overt (open).

Covert operations are usually associated with partisan groups operating in cities or built up areas and are not considered to be really military in nature. These operations include the organization and instigation of civil disturbances such as labor strikes, work slowdowns, protest meetings and riots. Then, under the confusion of these disturbances, the partisan can employ the most effective weapon of the covert variety, sabotage. While these clandestine operations are of more than mere academic interest to the military man, the operations which are apt to affect him more directly are those of the overt or open classification.

Overt operations are generally associated with partisan forces organized along military lines and operating from suitable terrain in rural areas. The enemy, in using partisan forces in direct, quasi-military action, seeks to cause enough harrassment and to interfere with operations in the rear areas to such an extent that substantial forces, which could better be utilized in the main battles, will have to be diverted to combating partisans, and protecting rear installations and lines of communications. As the partisan force becomes better organized, better trained and its actions become more closely co-ordinated with the action taking place on the front lines these operations assume greater significance. Important developments at the front will often result in extremely lively partisan activity, with the disruption and destruction of lines of communication the goal. The Germans in Russia, during one of their major attacks, had the unpleasant experience of having the main line of a railroad cut at 2,000 points in a single night. So effectively was the operation of the railroad disrupted that all traffic was stalled for several days. Such large-scale operations obviously had the effect of seriously hampering the supply of front line troops and by doing so affected the outcome of the battle. The dollars and cents value of the material destroyed was little, and the number of personnel lost as a direct result of this action were few, but when interrupting the lines of communication at a time when the Germans were engaged in important operations at the front and thus preventing them from getting needed men and materials to critical points, the partisans could no longer be regarded as a mere annoyance and some positive action had to be taken by the Germans to protect themselves from this menace.

This Australian officer and scouts stayed on Guadalcanal during Japanese occupation

In a final analysis, the enemy seeks to divide our forces; to cause us to fight in 2 places, the normal front against his regular forces where the decisive actions are taking place and in the rear areas against his partisan forces.

The ambush, the sudden surprise attack from hiding upon a moving enemy, can be considered the forte of the partisan force. With the extensive intelligence screen, provided by civilians to learn of enemy movements, coupled with the intimate knowledge of the terrain and inherent mobility, the partisan is able to effectively establish ambushes directed against rail, vehicular and foot

Japanese soldiers attack across jungle trail

movements. In his book, *American Guerrilla in the Philippines,* Ira Wolbert, describing the experiences of Lt Richardson, USN, has this to say about ambushes, "The Japs sent heavy-weapons squads with their patrols. The guerrillas let them go by. Then, in the evening when the Japs came dragging back all loose and tired from maybe a 15-mile march on which they had found nothing, the guerrillas hit them. For the ideal ambush, you need a long, deep ravine on the tops of which your troops can stand and fire down from both sides. You need it long so that you can let the whole Jap column get into it before firing. That prevents them from deploying and coming in on your splitup forces. You need it deep so that your own people won't hit into each other when they fire."

Another common partisan operation is the surprise raid with the object of destroying or capturing arms, equipment, supplies and personnel. Raids are also conducted against bridges, power plants, communication centers and other installations which may be of importance to the enemy.

Only partisans who have attained a state of organization and training equal to that of regular forces and who are well armed and supplied, are capable of successfully executing an attack in force against strong enemy garrisons and combat units. Operations conducted on this scale so closely parallel regular offensive combat that it is doubtful that they should be included as a partisan capability.

It is considered most unusual for the partisan force to engage in defensive combat. By going into a defensive position the partisan loses the characteristics which have made it possible for him to engage a regular force. He normally does not possess the necessary artillery, tanks and other means to engage in this type of operation. The partisan can be expected to engage in temporary defensive combat to prevent enemy penetration of important partisan controlled areas, however, he usually utilizes these operations to gain time to move to a new base of operations rather than engage in a prolonged position type defense.

The partisan is a civilian who has taken up arms.

He springs from the people and must have their support.

He can operate against regular forces because he capitalizes on his strong points and avoids those types of combat which expose his weaknesses.

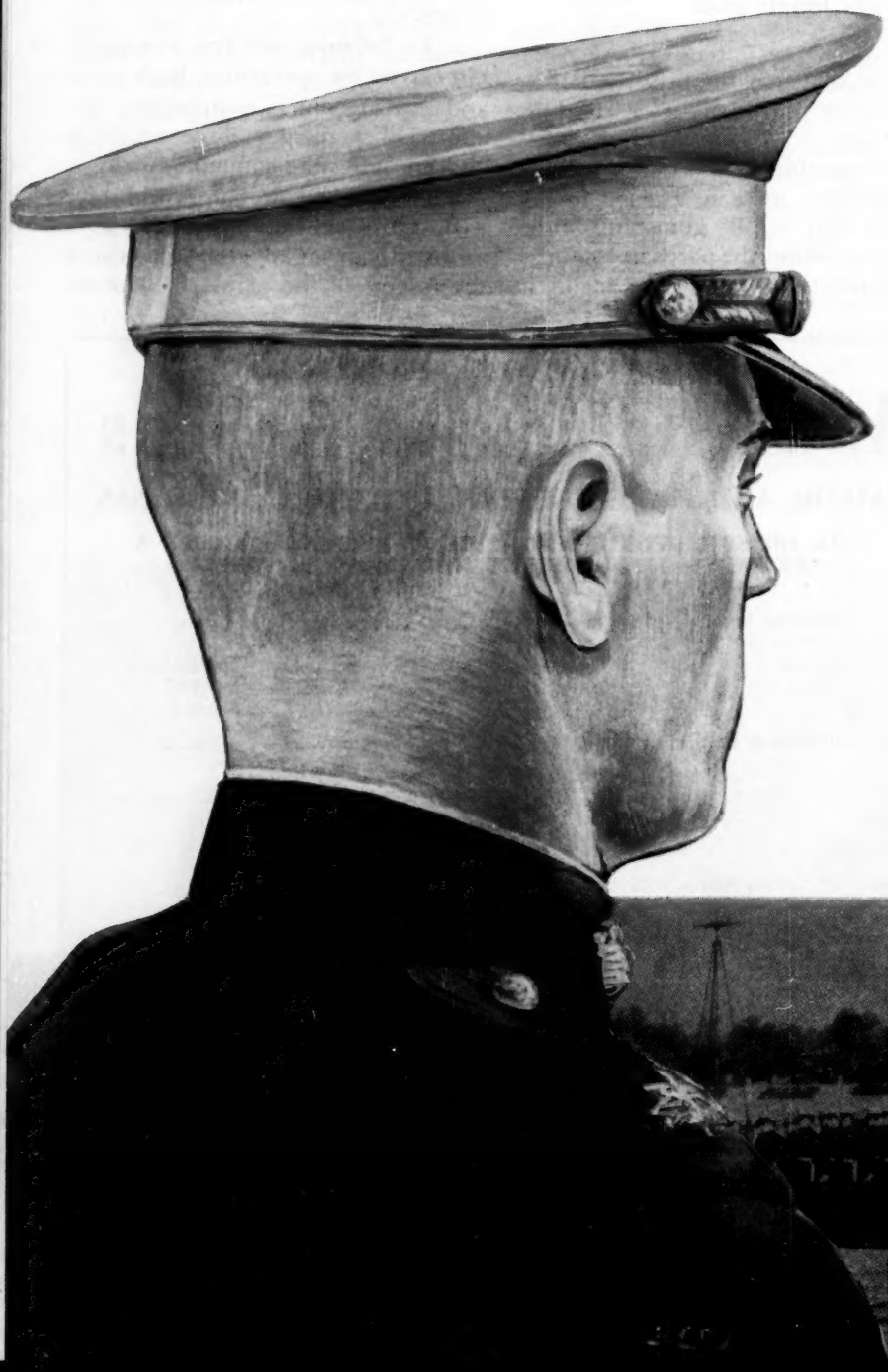
To be most effective the partisan carries on operations, both overt and covert, which complement the efforts of a regular force which is also engaging the common enemy.

The partisan who knows and stays within his own capabilities can be a useful ally or an adversary deserving the respect of the regular. USMC

One solution to help meet the

COMMAND SCHOOL

By Capt Joseph B. Love, USA



"With better leadership and command practices, the Marine Corps would solve its problems."

So spoke one of the Corps' outstanding colonels—a combat commander of a battalion in WW II and a regiment in Korea. He said it in 1957. The idea is so patently true that we sometimes ignore it. Leadership is like your lady—when you take her for granted, beware!

The problem of obtaining better commanders concerns every Marine, but if the "word" comes from topside, improvement will come faster and easier. Once a problem is recognized, the first step in the solution has been taken. The purpose of this essay is to identify our problem and to suggest a school to the Commandant that will help provide a solution.

To examine the need for command improvement it is necessary to look forward to operations in combat in an era well-described as one of "nuclear plenty." So much has been written about the form of warfare in this period, none of it based on experience, that the true nature of such conflict is impossible to predict. There is no lack of puzzling over the possibilities, however, and from this conjecture clear fundamentals emerge. One is that the Principles of War, although applied differently, will remain unchanged. Another fundamental that is apparent, is the enhanced stature and role of the junior officer in the field, particularly the battalion commander. Capt B. H. Liddell Hart, the distinguished military writer, puts it this way:

he need for better command performance is to establish a school which will emphasize the duties of the commander

"Battle has become a team-game on the largest scale in which the junior leaders (he includes battalion commanders in this reference) are players, not pawns . . . and they will collectively carry more weight in the military balance."

Since present concept teaches the battlefield separation of battalion-size units, the battalion commander steps into the picture as the first of a chain of semi-independent commanders. This man must be first rate! This leader's problems are larger, his difficulties mountainous, the challenges to his self-control, initiative, mental capacity and decisiveness, extremely sharp. This same panorama faces the commanders of the combat support, service support and air units in a conflict that knows no "front lines" or "rear areas." Field Marshal Montgomery describes this commander as one characterized by boldness, imagination and who can make immediate decisions on the spot without reference to higher authority.

The system in operation today has produced the commander-type described above, and it will again. The point is, the need will be for *more* commanders of this stamp and of a better general ability than is on hand now.

Without being super-critical, it is easily seen that our present day level of command competence is not high enough. Put it this way—the level may be good, but not good enough. There are too many problems that are directly and indirectly attributable to not having better direction of our units. To list a few: combat readiness postures; re-enlistment, AWOL, and courts-martial rates; and many areas of personnel dissatisfaction. To say that most of these problems are imposed by conditions outside the jurisdiction of the immediate commanders and thus chalk them off as the time worn burdens of military system, is not good enough. They are command problems. More competent commanders will get better response in these areas.

Methods of training for command are inadequate and can/must be improved. We rely on 2 methods to train officers for the responsibilities of command at the battalion level: through the experience of commanding smaller units and instruction in formal schools.

No one questions the fact that experience is the best teacher. One learns to command by commanding. Today, however, there is an increasingly greater percentage of career time, even with captains and lieutenants, being spent away from troop and small unit command duty. This is a real shortcoming.

In analyzing the methods of preparation for battalion command in formal schools (primarily Junior School), it is evident that the vast majority of work and instruction is in the training of a staff officer. Detailed presentation of subject material to the students is the rule, and the staff action necessary to carry the commander's desires into execution is emphasized. This is good, necessary training, but the commander's vital role is a comparatively minor one in emphasis and when played, it is played by a handful of the total number of student officers. An attempt is made to bring out some of the characteristics necessary in a commander—decisiveness, perception, forcefulness—but the size of the class and the low ratio of instructors to students permits only a token effort in that direction. When the majority of the hours are spent on detailed, time consuming planning and estimates, the very qualities desired in the commander are subordinated. Also, the size of the class dictates committee work, and while this is good staff practice, it is not the ground work for developing within the "commander" those attributes which enable one to make decisions and to carry the burden of command alone.

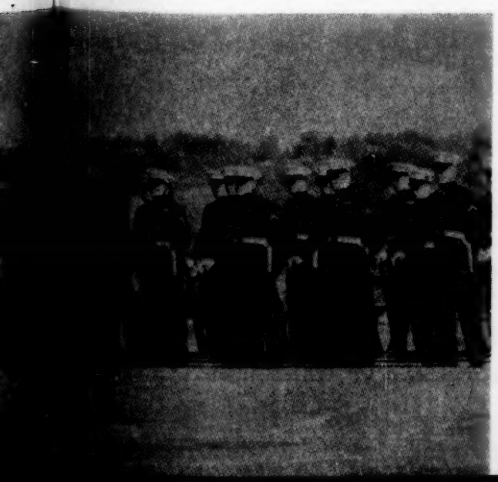
At some point in training for staff echelon command the importance of "execution" must be hammered home. It is just as important here as it is at the platoon leader level where such good emphasis is now achieved. On this subject Field Marshal Rommel observed:

"One of the most important factors —not only in military matters, but in life as a whole—is the power of execution, the ability to direct one's whole energies towards the fulfillment of a particular task. The officer of purely intellectual attainments is usually only fitted for work as an assistant on the staff; he can criticize and provide the material for discussion. But a conclusion intellectually arrived at needs the executive power of the commander to follow it up and force it to realization."

Somehow, more of this forceful-type leader must be obtained.

One solution for helping meet the need for better command performance is to establish a school to emphasize the duties of the commander on the battalion level. This school should be inserted in the Marine Corps Schools' structure between Junior and Senior Schools. It is titled "Command School" in this essay.

Command training implies instruction in many subjects, but essentially it is concerned with developing the skillful use of authority, good tactical sense and the ability to handle military organization. Dr. Douglas Southall Freeman, the biographer of Lee, summed up the qualities necessary for one to successfully lead American men in the formula: "Know your stuff—Take care of your men—Be a man of character!" This expression encompasses the entire area of command and leadership. It is not the purpose of the school visualized to



"teach" leadership *per se,* but leadership and command are inextricably woven together. When the practical exercises in the conduct of the school develop special leadership situations, the qualities of leadership necessary to the solution may be discussed. Aspects of leadership also will be shown the student by example of the staff. Thus, leadership will be taught indirectly, which is the most effective method.

Command training also emphasizes the need for a staff and seeks not to create a division between command and staff, but to impress vigorously the correct use of staff and how to recognize and obtain completed staff action. The fact that staff work is merely a means to help effect command policy, and that the staff exists solely to assist execution is hammered home.

The theory of operating the school is based on a minimum of formal instruction, a maximum of individual participation, and insistence on high standards of student performance. The student comes to class prepared, launches right into the subject problem and learns by doing. Performance is closely observed, individual work and oral recitation required, and a critique given each student. By this testing, the instructor is able to judge the student's strong and weak points, and give instruction to strengthen the areas of weakness before the start of the second problem. In demanding high standards of performance, adequate and realistic solutions are desired; not perfect form necessarily, but a performance that reflects sound thinking and high working standards for the preparation time allotted. It is not intended to have compartmentalized examination that demands a "pat" answer; the desired solution is one that is useful in practice and will not be discarded later as so many "school solutions" are because they are perfect in detail, cover every extremity, but which would be almost impossible to conceive in the limited time available under field conditions.

In describing how such a school operates, it is helpful to compare it with the methods that a good regimental commander uses in training his own battalion commanders. The significant elements of such a system are:

1) a healthy, interested senior-junior relationship that promotes the best efforts on the part of both the teacher and the student;
2) individual work and critique;
3) instruction that meets the need and pace of the student;
4) an assurance that competence by the student will be achieved; and
5) a real "problem" to solve.

The form of the command school is designed to take advantage of these elements. By the use of a very low instructor/student ratio, one to four, the best results can be obtained from using the accepted methods of instruction such as terrain exercises, command post exercises, tactical walks, historical rides and discussions.

The heart of the theory on which the school operates is the "problem solving" method. The student is given a problem; he solves it. He is not lectured, guided, bored or oversupervised—he is not prevented from learning! Mistakes are allowed. After critique—another problem. Learning is lasting. To solve a problem correctly, one must first know the problem.

There are many techniques to be used throughout the course which have the benefit of teaching many subjects concurrently and stimulating the imagination of the student. In terrain and command post exercises, the plan of instruction should have several forms to allow for the weather—wet or dry, cold or hot, etc.—in order that the student is not burdened with obtaining his "feel" of some important details from a paper situation rather than his senses. With only the necessary outline committed to paper, and the major part of instructional plans in the instructor's mind, realism and flexibility are easy to achieve. A CPX with skeletonized troop unit support, not too highly burdened with many echelons, or too rigid a time schedule, is of help to student and umpire/instructor. Each student should be assigned as "CO" of an infantry battalion which he would use as a vehicle of instruction for problems throughout the length of the course.

Historical rides, exploited to the maximum by use of helicopters, are of tremendous assistance in stimulating the student and in teaching the unchanging principles and problems of command. Situated so near to the area of the operations of the Army of Northern Virginia and the Army of the Potomac, an opportunity is presented a school located at Quantico to take full advantage of battle situations bristling with fundamental problems and the conflict of personalities that make the study of command so vital and exciting. The opportunity exists to cover in one or two days, an entire campaign of Stonewall Jackson's, or any other of the period 1861-65; this would be profitable, for the strategic movements of those years are quite analogous to the tactics envisaged on tomorrow's battlefield.

Throughout such training it is possible to weave together the many aspects of leadership and the relationship of all necessary subjects in a convincing manner. The agility and the grasp of both the instructors' and students' minds are the only limitations imposed. Definite knowledge and inspiration, and a thirst for more learning are gained by imaginative instruction. Mobility, granted so vital today, *is a state of mind* as much as it is possession of some articles of equipment. Training that is bold, enthusiastic

Capt Love enlisted in the Army Air Corps in 1943 and three years later entered the US Military Academy, West Point. Upon graduation he served as a Platoon Leader in the 82nd Airborne Division and later, in Korea, as a Rifle Company Commander, 5th RCT. From 1955 to 1956 he was Aide de Camp to the Superintendent, USMA and following this assignment attended the Junior Course, MCS, Quantico, Va. At present he is a company commander in the 77th Special Forces Group, Airborne, Fort Bragg, N. C.

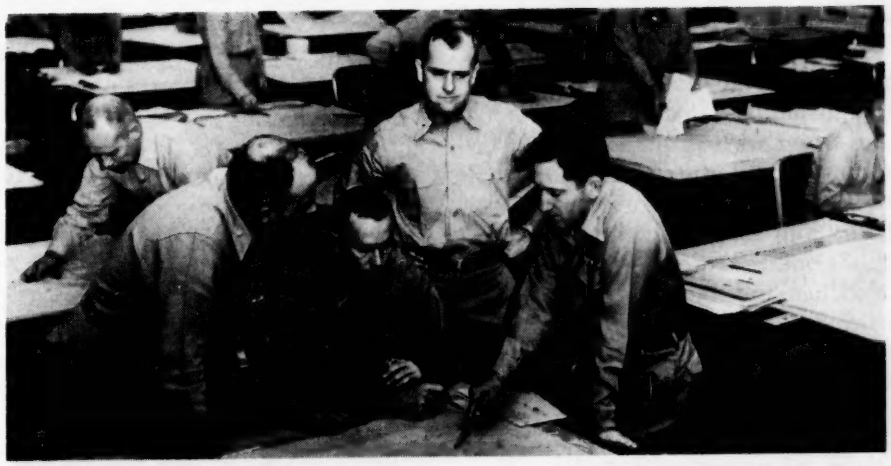
and moves at the pace the student is capable of maintaining, is the way to imbue in the student those attributes necessary for command.

The daily classroom schedule should be only 4 hours. Exercises, practical problems or field recitations, however, should be allowed as much time as necessary, and could cover 24 hours or more on occasion. By giving the student half of each day not in the field in which to study, plan or rehearse, higher standards of performance can be gained.

The size of the officer group attending should be small, and a number of 16 is considered ideal. A low figure is dictated by the individual nature of the problem solving and critique methods that are used. The quality of instruction can be higher. Proper attention to the capabilities of each student in order to insure competent performance can be given more easily. Also, with a small group, a professional attitude and a keen sense of responsibility on each student's part is easier to achieve.

The length of the course of the Command School should be 6 weeks. The subjects of study and requirements for individual performance require intensive application during this period, and this effort by the student is best maintained at a high level for a short period. If the course is short, it will be more readily available to officers on a temporary additional duty basis, thus assisting in overall assignment planning. Interests and outside activities of the student officer can be subordinated or restricted during a short course, and his full efforts applied to the instruction. Also, the adaptation of such a length course to the needs of reserve officers, or the needs of mobilization training, is effected readily.

Facilities desirable for a small school are not difficult to find when compared to the usual school plant. The location should be fairly remote in order to eliminate distractions and to be readily available to training areas. An ideal location exists at Camp Barrett, the new Basic School. The Command School could occupy an adjacent area within the camp limits, thus taking advantage of the recreation and support services. Location near Basic School would have the added advantage of having the student officers work in a troop atmosphere and with a constant reminder of their responsibilities, as embodied in the new lieutenants, in ready view. From Basic School standpoint, the presence of such a small number of officers in another school would not be detrimental. The school should have its own mess, a small and selected military library, and comfortable billets appropriate to the rank of the students. Although no liberty restrictions should be placed on the students, it would be highly desirable to have them not be accompanied by dependents to the duty station, and consequently billet as a group at the school.



In the composition and quality of the staff lies the key to the whole Command School and its methods of instruction. Any quibbling with the fact that the very best available officers must be assigned as instructors would negate the whole plan, operational theory and impact of the school. A basis for planning should be one colonel and 5 lieutenant colonels, plus a secretary/operations officer and the necessary enlisted staff required. The colonel selected for the director's billet must be one of the finest in the Marine Corps, with regimental command combat experience, and a confirmed reputation as a leader of men. If the criticism of forming an "elite" group is to be aimed at any facet of the Command School, the selection of the instructor group must be the first and admitted target. The lieutenant colonels must be of the same stamp as their director: officers of proven ability and leadership, articulate, poised, loyal, intelligent, capable of inspiring their students, and completely worthy of emulation. This colonel and his staff must be leaders and active participants in the training, not simply instructors. They must know their jobs, have the personalities, confidence and forcefulness necessary to create the strong, favorable impression on the student that will be remembered and emulated. The necessity for this type of officer for the staff can not be over emphasized. While leadership is not "taught" in the curriculum, it is believed that the strongest, surest method of learning that intangible combination of attributes known as "leadership" can best be gained by association. Hence, through association with the instructor staff the student will be improved and strengthened. The reader who is doubtful is requested to think of one of the ablest officers he knows one or two grades senior to himself, and draw his own conclusions about the merit of associating with that officer on an instructor/student basis for 6 weeks.

The officer assigned to this staff must know good solutions, accept those that are workable, or firmly and tactfully deny approval of those that are basically in error. The instructor must leave no doubt in the student's mind that he has skipped a step in his analysis if such is the case, but at the same time full freedom of discussion and expression of student opinion must be permitted. Freedom of discussion between officers is very important. Except in emergencies or for other good reason, the officer who will not allow his subordinate a hearing, lacks the common sense, or moral courage, or

confident poise that is necessary to command well. Allowing full expression permits the junior to argue to the point of decision with vigor and often with profit to all. By his example, the instructor can teach the student to allow others to speak freely and honestly with him. It is this honest expression of opinion, and then the solid closing of ranks behind the commander's decision, that gives the military organization such virile and unified power of execution.

The staff must be kept small. Smallness in size will help keep all cognizant of the fundamentals of simplicity, oral presentation and flexibility, and help avoid detailed paperwork.

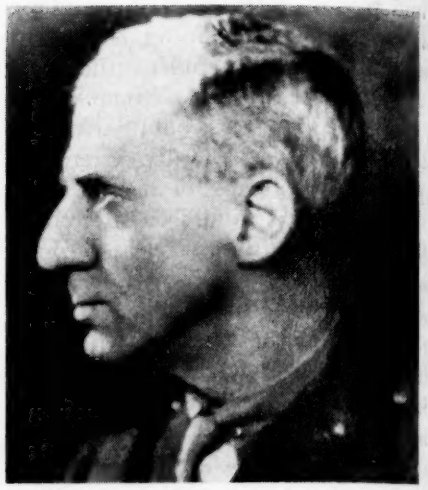
The curriculum of the school must reflect the theory of operations upon which the school is based; that is, it must stress fundamentals, use a minimum of formal instruction, and a maximum of individual participation.

Although there are hundreds of subjects a battalion commander is expected to know, the course is not one in the nature of a conducted review; it must contain the *most* important aspects of "know your job." The exercises and problems conducted will require familiarity with organization, communications, tactics, logistics and the functions of the executive and special staff sections.

It is a necessary assumption that the student will arrive at the school possessing this knowledge. The majority of the time must be used in the actual conduct of exercises and problems using battalion situations —attack, d e f e n s e, administrative, planning—as vehicles to weave many related subject areas together.

Formal instruction should be conducted in the "Theory of Command." This subject to include a short study of the evolution of command practices, the tradition and meaning of subordination to civil control, the interdependence of responsibility and authority, and the duties and prerogatives of command. Historical examples, some of the most famous being within recent years, can serve as excellent examples of the conflict that sometimes occurs between the theory and practice of command. It is important

Lejeune



Butler

that the student recognize the causes that underly such conflict. Another subject that should be presented is "Techniques of Command," with heavy reliance on related historical examples. These 2 subjects, theory and techniques, are closely allied with leadership and difficult to teach, but absolutely necessary in the syllabus.

The desirable goals of presenting "Theory and Techniques of Command" would be to develop a better grasp by the student of the fundamentals of effective military administration, the lack of proper application of which causes much frustration, inefficiency and trouble today. Some points to stress are:

1) What true delegation of authority is.
2) The meaning of loyalty — up and down. Especially:
   Up — Take responsibility for orders issued by higher authority.
   Down — Back up subordinate commanders in their exercise of command.
3) The swift application of justice.
4) The dangers of avaricious ambition.

It is interesting to note a comment by Field Marshal Rommel that covers several of the above items:

"It is always a bad sign in an army when scapegoats are habitually sought out and brought to sacrifice for every conceivable mistake. It usually shows something very wrong in the highest command. It completely inhibits the willingness of junior commanders to make decisions, for they will always try to get chapter and verse for everything they do, finishing up more often than not with a miserable piece of casuistry instead of the decision which would spell release. The usual result is that the man who never does more than supinely pass on the opinion of his seniors is brought to the top, while the really valuable man, the man who accepts nothing ready-made, but has an opinion of his own, gets put on the shelf."

This comment is not particularly applicable to the Marine Corps, but only constant vigilance by commanding officers to prevent such eroding practices, can maintain esprit and strong organization. Awareness of these dangers is especially needed today when rapid communications and public interest in the armed forces can magnify any mistake to unreasonable size.

Stress should be placed on the improvement of "communication skills" of the officer. What little writing is required should be graded for clarity and conciseness. Heavy emphasis should be placed on speaking ability. Since most of the practical work is designed for oral recitation, ample opportunity is available to judge and improve every student in effectiveness of speaking. Talks before students and staff should be included. Better "command poise" can be developed in this way.

Many officers today stress desirability of schooling in "psychology." They cite this need in simple terms of right and wrong. This is another indication of the weakness of previous experience in command training, and the fact that there is a lack

of adherence to leadership fundamentals in many quarters. FM 22-10, "Leadership," contains all any commander needs to know about psychology. An hour of instruction to drive that point home should be included.

When one comes to the problem of "component instruction," it is best to fall back on the theory that every unrestricted officer should be a basic infantryman. There is no reason why some of the exercises could not be designed for the officer in the applicable MOS—air, artillery, tank, motor transport, engineer, etc.—and their inclusion would assist in meeting the mission of improving that particular officer in knowing his job.

The majority of the instruction would of necessity have to be widely applicable, however, and this returns one to the ideal infantry vehicle.

Not to be overlooked in the syllabus is physical training. An hour a day should be spent in group participation, staff and students together, in appropriate exercises or sports. The dividends in esprit, alertness of mind and well-being, would more than repay the time spent, and would also serve the student as an excellent example of the importance he should attach to physical training in his own unit.

Selection of students should be simply a matter of what is best for the Marine Corps. The best qualified officers in every MOS field should attend, and HQMC, for the obvious reasons of efficiency and uniformity, should make assignment of officers to the school. Allowing quotas to commands for a school of this nature and importance, might well mean detours for the deserving due to the ever-present local need for the hard working officer. In setting up quotas among the MOS fields, it should be realized that there are many important commands outside the combat units, and that officers in these fields have many times had less experience in commanding troops than officers of the same grade in the combat MOS fields. Any billet left vacant by a Marine who fails to re-enlist because of some command failure, is just as empty to overall personnel requirements as one in an infantry battalion.

Officers selected should be in the grade of major. Lieutenant colonels are too senior, and in many cases have had the experience that the school is designed to provide preparation for. An important aspect of the school is the healthy senior/junior relationship between instructor and student, and it would be undesirable to make exceptions to this relationship. The assignment of captains to the school has no objectionable features, for many would have the necessary background, but it is considered that they would have ample opportunity later and when they are closer to assignment to battalion level command.

No attempt is made here to compute the cost of such a school. The output of students completing the course each year would compare favorably with the number of students attending Senior School, and would be roughly half of the number attending Junior School. Considering 6 courses conducted during the year to be the practicable number (in order to have 6 weeks free and 2 weeks between classes), an output of 96 officers could be obtained. The expense would pay off.

The advantages expected from conducting a Command School are:

1) A successful completion of the school would mean that each student had improved his immediate, demonstrated ability and knowledge to command. The assumption that his overall potential and worth to the Marine Corps would increase is valid, for the officer would usually be in his 12th to 16th year of service, with much time remaining in the Corps and the years of greatest responsibility just beginning.

2) The ability of such a school to exercise an immediate and favorable influence at the "working" level in a Marine Corps of the size represented by 27 infantry battalions is readily apparent.

3) A practical method at the centralized level of Marine Corps Schools, based on the proven techniques of the past, would be established to assist in the training of commanders. The "problem solving" of Command School would extend the best training methods to an ideal situation where student officers would get the opportunity of doing practical work and being associated with some of the best leaders in the Marine Corps.

4) The Command School, by virtue of the short length of the course, and the heavy emphasis on execution and practical work, would be readily available for the training of reserves or a mobilization task.

In conclusion, the need for improvement in command training is apparent if the requisite numbers of resourceful leaders for the independent and dispersed operations of atomic age warfare are to be met. Current unit problems and areas of dissatisfaction also offer evidence of the need for better leadership. The best method for achieving command competence is by commanding, but a school with intensive individual performance requirements, drill and critique, would be of great assistance in this development of better leaders.

Such a "Command School" is feasible and should be established. The United States Marine Corps would profit. USMC

OBSERVATION POST

PESSIMISM

SUPSCH, CAMP LEJEUNE, NC. — A pessimism seems to exist in the Marine Corps of today. I find it among my contemporary officers; it seems to say, "The next war will be an atomic Armageddon, the ballistic missile air force will be the only important fighting unit and the Marine Corps will be absorbed in a one-uniform Single Service." Such pessimism expresses itself frequently in those articles which say "This-or-that will be important in the next war and the Marine Corps better start work on it OR . . . " Its prevalence among the officer corps is apparent in the common argument of whether or not the Army can fulfill our amphibious role and why they should or should not.

This attitude concerns me, frightens me and disgusts me. It concerns me because there is no reason for it; the reasoning behind it is the result of panicky fear and an unrealistic awe of modern weapons. It frightens me because such pessimism is quite capable of creating its own realization. It disgusts me as a sign of the lassitude and the creeping loss of purpose that can weaken our Corps.

The next war will witness death and destruction far greater than any the world has yet known. Whole cities will be demolished under billowing mushroom clouds, our industrial complexes will be riven by the bombs, the populace will suffer appallingly.

However, this will not be total annihilation. Were a full scale war to break out today, our Strategic Air Command and carrier based aircraft would take off with weapons potentially capable of destroying every major Russian city. How many of them would reach their objectives? It is impossible to answer exactly but Hanson Baldwin *(The New York Times,* 3 February, 1958) made this comment "A recent operations analysis report predicted that within the immediately foreseeable future Soviet defenses would become so strong that if American B-47s and B-52s were to strike at Moscow the first 100 of these planes would be shot down." Logically, our defenses should be able to impose a similar attrition rate. On this basis, we are unjustified in assuming the annihilation of mankind by atomic weapons delivered by piloted aircraft.

The intercontinental ballistic missile seems an awesome ultimate weapon. However, it is not now an operational reality and will not be for some time. And by the time that it is, technology will certainly have developed an effective countermeasure — this is the inevitable way of technological progress. And the next ultimate weapon will similarly generate its own countermeasure. Defenses do not receive the publicity given to offenses — they lack the sensational and sordid glamour of destruction—yet the two invariably develop hand in hand.

The hardware of today and of the future is incomprehensively expensive and infinitely demanding of a nation's technological resources. When the attrition rate of attacking aircraft, worth millions of dollars apiece, is over 99 per cent, even the wealthiest and most scientifically gifted nation must incorporate economic caution into its tactics. We possess some 4,000 planes capable of carrying atomic weapons. If all survived the initial enemy attack, which is doubtful, and all were within range of worthwhile targets, which is unrealistic, we could destroy an utter maximum of 40 targets. However, we could neither justify such "all-or-nothing-at-all" strategy nor accept the complete destruction of our air power which would result. The "one-day war" of sensationalism must be stretched out materially if we are to retain an airpower reserve while replacing our losses. Ballistic missiles, if we assume an equally effective system of defenses, would be just as limited by the realities of economics and industrial technology.

The truth is that the verdict never can be decided by long range atomic warfare. The age old truth that wars are won on the battlefield will never be more vindictively illustrated. The undervalued infantryman, supported now by atomic missiles, will be as important as when he was supported by horse-drawn chariots and catapults.

The horrendous first day of atomic dueling will throw each of the combatant nations into a state of shock and confusion. The side that reacts the fastest and the most aggressively during the second day will carry a great advantage into the third day. Synchronized with the opening aerial attack (I assume here that the Communists initiate the conflict), our enemy will instantly dispatch ground troops into all of the nations which surround its homeland. Defending against, containing and repelling these attacks will be a mission of the utmost importance. And it is a mission for ground forces — the most powerful nuclear air force is useless against self contained and well dispersed armies.

In addition to defense we must initiate offensives of our own. We must do this to take advantage of the initial period of shock and to provide bargaining points during the reorganizing and rebuilding of the third day.

By virtue of tradition and because of its combat readiness and peculiar mobility, the US Marine Corps is the logical service for the offensive mission. The Marine Corps, from its Asiatic bases will be able to mount swift and aggressive conventional retaliation. It may be by amphibious landing or vertical envelopment or, more likely, by both. It may strike against the Chinese mainland, the eastern coast of Russia or one of the Kamchatka Islands. The detailed tactics and the exact objective are beyond my own personal scope and the scope of this article. However, the methods can easily be devised and a suitable target chosen.

The Marine Corps, therefore, retains its mission and can assume the very important and necessary role of spearheading the offense of the next war. Our experience and tradition have prepared us for this responsi-

bility. We must, of course, keep pace with the technological developments of modern warfare and incorporate within our FMF structure those pieces of scientific hardware that can support our mission. However, it is equally important that we maintain the concept of a Marine as an amphibious infantryman and that we continually emphasize the importance of our amphibious role in the future conflict. We must never lose faith in the intrinsic values that have made our Corps great and that will perpetuate its tradition.

1stLt D. L. Young

MARINES AFLOAT

US PACIFIC FLEET, CRUISER-DESTROYER FORCE. — Col Heinl's timely article *So Acquainted with Maritime Affairs* (GAZETTE: Nov. '57) has focused the attention of many Marines towards the importance of the Afloat Mission of the Marine Corps. He has covered it extremely well, and I am sure it has awakened many who perhaps have not given much thought lately to other than the FMF mission of the Marine Corps.

Maj Fox's observations in the OP column (GAZETTE: Jan. '58) have merit and are food for thought.

Having had a tour as a detachment commander afloat and being presently assigned where I have been in a position to observe Marine Detachments afloat within this force, I have the following observations, comments and recommendations to contribute:

Observation: There is a definite anxiety among some officers being assigned sea duty due to their being "away from the Corps." Where once the afloat assignment was considered within the expected sequence of events within a career in the Marine Corps, there seems to be in some instances an underlying feeling that it is a necessary "evil" and just another assignment.

Comment: This may be the result of our overall mission and purpose of the Basic School.

Recommendation: That a specially constructed letter from CMC or his representative setting forth the importance of the forthcoming afloat assignment be attached to the orders issued by HQMC. This will reassure the officer that the forthcoming afloat assignment is recognized, as always, as a most important assignment. To many who read this recommendation it may seem irrelevant, but I feel it quite necessary.

Observation: There is no Sea School for officers as there was during WW II and immediately thereafter. With the limited amount of instruction in the Basic School syllabus, there should be something instituted to brief officers prior to going aboard.

Comment: In cruisers of this Force, most Marine JO's are Naval Academy, NROTC or former enlisted — no use assigning JO's who are not planning a career in the Corps. Most detachment CO's are non-academy or non-ROTC. This goes along in part with recommendations made by Col Heinl. At the present time, I am personally giving an informal briefing to all Marine officers going to cruisers.

Recommendation: There will be an official recommendation forthcoming from this Force to CMC favoring briefing of Marine officers prior to reporting aboard ship in the very near future.

Observation: The length of the tour for officers afloat is always open for prognostication, same as for any billet. I also feel that there are billets open for majors afloat but not as carrier detachment commanders as Maj Fox recommends.

Comment: 18-month tours for all detachment officers will keep sufficient continuity. If majors were at the Cruiser-Carrier Division level, co-ordination of the activities of the separate detachments within the Division would be standard procedure instead of haphazard.

Recommendation: All Marine officers tours be 18 to 20 months vice 24 months. That 0302/0802 majors be assigned to the staff of each Cruiser Division Commander and a 7300 (aviation) be assigned to Carrier Division Commanders. This will place Marine officers at the operating level where they can monitor "Type" and Force operations as well as Marine matters.

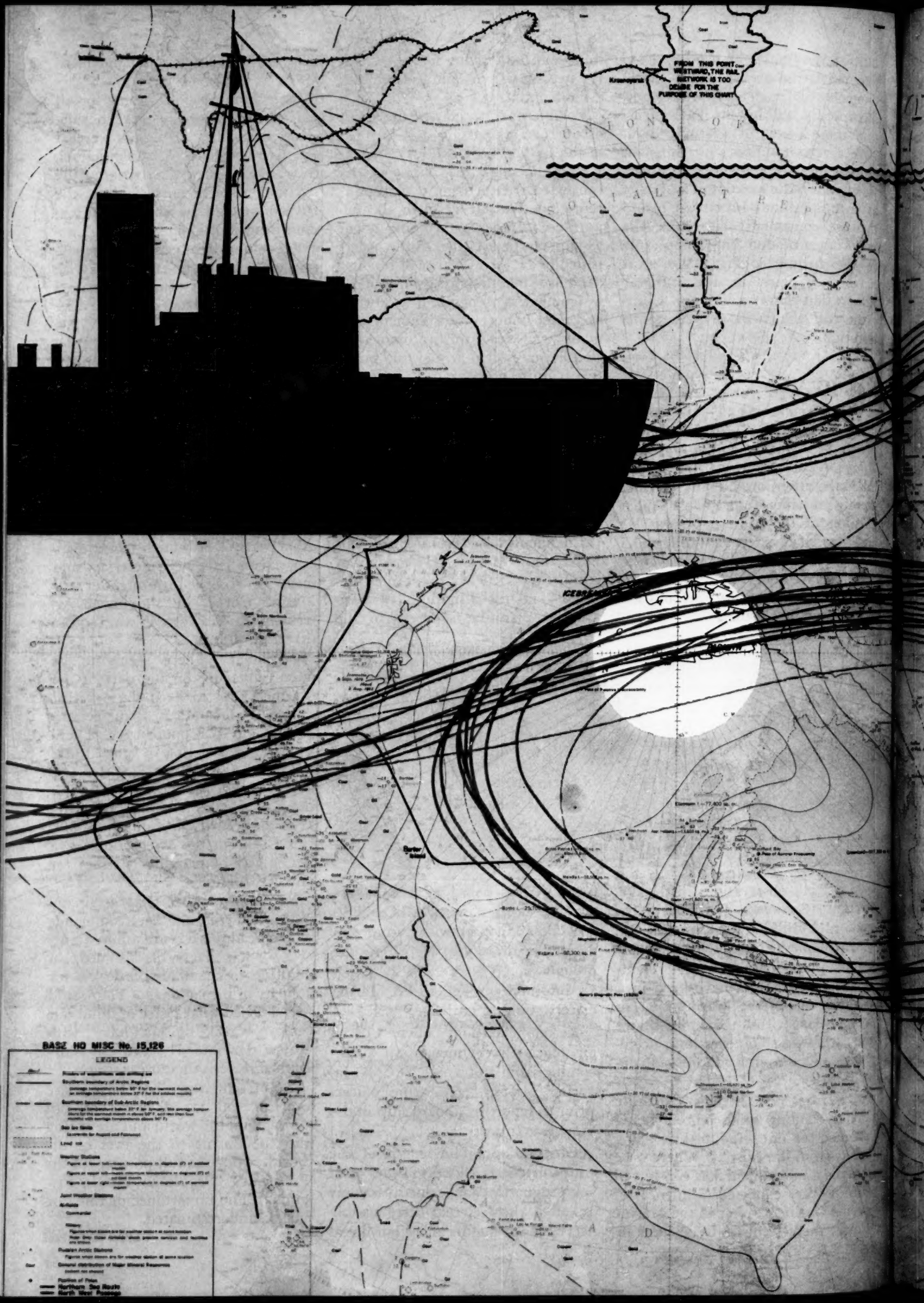
Observation: Recent reductions of Flag enlisted allowance for Commands ashore have taken the ever alert, ever military Marine out of the eyes of our contemporaries in the other services. Although recent manpower cuts have been necessary and must be absorbed throughout the Marine Corps, we should be extremely careful where we require that absorption.

Comment: There seems to be some reluctance on the part of the Marine Corps to keep the orderly/chauffeur for other than certain afloat Naval Commands. There seems to be a feeling in general that assigning Marines to Flag Officers is a waste of manpower. I cannot think of a better way to strategically keep the security mission of the Marins Corps in the foreground, or a better way of training Marines for any eventuality.

Recommendation: That certain important "Type" and fleet commands whose headquarters are ashore (especially 3-star flags) be assigned, in addition to chauffeurs, orderlies for security of the command. You would be surprised what peace of mind our senior Naval officers have with "their" Marines who are especially trained to keep their areas secure.

At present, seagoing Marines are ever present at all ports of call throughout the world and are taking the US Marine to the eyes of the world. They are full partners in the President's "People to People Program." The importance of this cannot be underestimated.

LtCol R. C. Peck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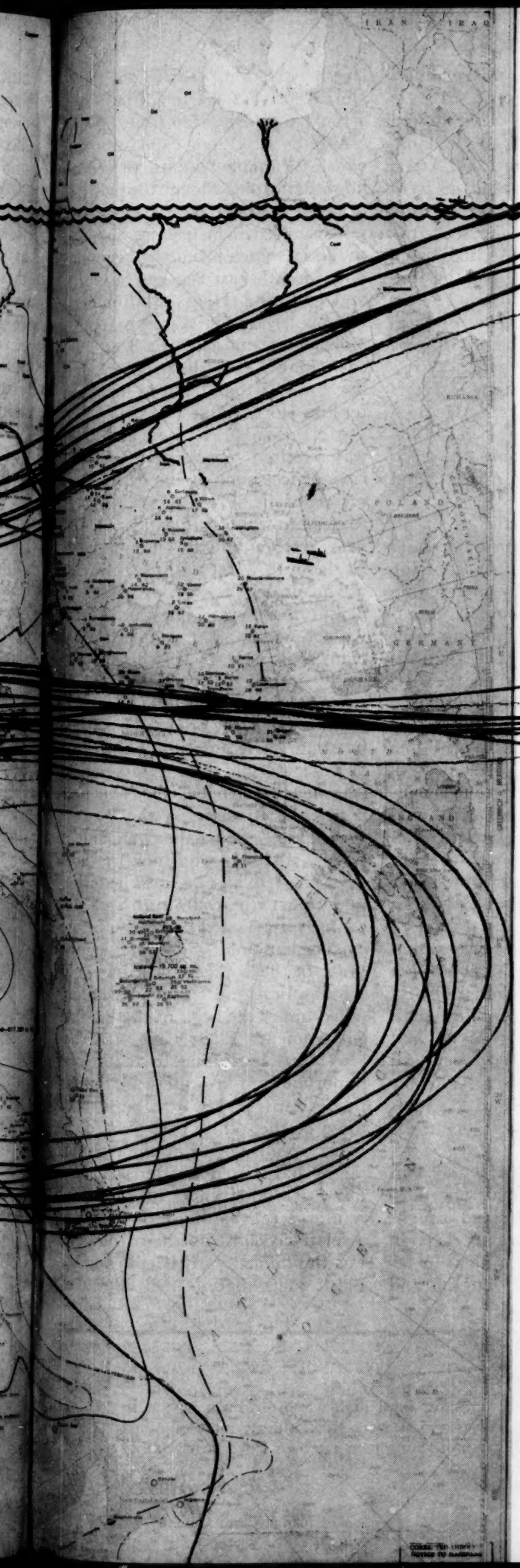


the cold front

By Russell S. Hibbs

On such a full sea we are now afloat,
And we must take the current when it serves,
Or lose our ventures.

WHEN AT THE TURN OF THE TWENTIETH CENTURY Sir Halford J. Mackinder formed his Pivot Area or Heartland thesis, he noted that nine-twelfths of the earth's surface was covered by water. From this realization rose the concept of a World Island. The Heartland of the World Island was defined by Mackinder as the northern and interior part of Eurasia, extending from the Arctic coast to the central deserts. Due to its interior position, the Heartland was not vulnerable to sea power. Thus, the thesis presupposed the barrier effect of the Arctic. The global concept has since become *a la mode,* unfortunately only one facet of the "new" geography is widely heralded; the naval implications and potentialities of the Arctic are generally little understood or studied.

If in the past there was justification to regard Russia and the Soviet Union as a land power, within the geographic body of which lies the Heartland, the present status of the Soviet Navy is adequate warning that such an approach is dangerously archaic. Soviet geopoliticians seek not to pit land power *against* sea power; they are effectively combining continental *with* sea power. This is the story of the expanding potential of the Soviet Navy in the Arctic.

In 1945, James V. Forrestal and Winston Churchill were separated by an ocean but were united by their perspicacity; both realized the necessity of countering communist expansion in the Mediterranean. In 1946, the *Missouri* showed the flag in Istanbul, Piraeus, Naples and other Mediterranean ports. In the following months she was joined by various units of the Atlantic Fleet; the Fleet put teeth in the new policy of containment.

The policy of containment *per se* does not alter or retard Soviet expansion. While highly desirable to contain Soviet expansion in the direction of Turkey, Greece and Italy, such aggression must be met with equal vigor in the Arctic Mediterranean. By what turn of chance has the USSR laid claim to nearly 50 per cent of the Arctic Ocean? Did other powers lack the clairvoyance to foresee the strategic importance of the area? William Henry Seward, Secretary of State in Lincoln's and Johnson's cabinets, contended that the US needed both Iceland and Greenland for control of the North Atlantic. He advocated that they be purchased, not seized by force or undermined by communist-type tactics. Seward's premonition of the value of Alaska in controlling the North Pacific was equally sagacious. Thanks to "Seward's Folly," the US now possesses one bank of the Dardanelles of the Arctic Mediterranean and has some small claim to northern polar areas.

Soviet acquisition of nearly half of the Arctic was not spectacular. The world awoke from a two-dimensional dream to find the USSR in *ipso facto* possession of nearly 50 per cent of a vital area in a three-dimensional world. By a decree of 15 April 1926, the USSR claimed all *terra firma* not already recognized as territory of a foreign state, lying between the coast of the USSR and the North Pole, and between the meridians of longitude 32° 04′ 35″ E & 168° 49′ 30″ W.

The USSR was the first power to claim Arctic lands in this manner; nothing was said of Arctic seas. *De jure* possession of the seas followed *de jure* possession of Arctic landmasses, but *de facto* control of Arctic landmasses came only after *de facto* control of the Arctic seas. In spite of various political theories, the present division of the Arctic is based on silent understanding and the ability to support one's claims. The littoral states attempt to control areas in their particular Arctic regions. Five littoral states are generally recognized as having legitimate sectors of control in the Arctic Mediterranean: the USSR, Canada, Denmark (through Greenland), the United States (in view of Alaska), and Norway.

Control of the Arctic, as of all seas, is relative. Control decreases directly with the distance from the littoral, as modified by intervening landmasses, the economic importance of the littoral, and numerous other considerations. The USSR is cognizant of its control in the Arctic. In all atlases from those prepared for seven-year schools to the *Atlas Mira* (Atlas of the World, one of the most important Soviet atlases), the cartographer has proudly indicated the eastern and western boundaries of the Soviet Arctic realm. This is not an idle boast. Let an American plane venture too near this *mare clausum* and it is shot down.

The US Navy has long been proud to bear the title, "The Nation's First Line of Defense." In the event of a future conflict the front-line shall unequivocally be in the Arctic, and in the Arctic the US Navy may well become only second best. The Soviet Navy is today the world's most experienced in, and best organized for, Arctic operations.

In the era when Spain and Portugal were the great maritime powers, England and Holland sought new routes to overseas markets in order to compete with their maritime adversaries. Both English and Dutch explorers searched for a North East Passage to Cathay; such a route would be free from Spanish interference. Dutch expeditions, in which William Barents played an important role, thought equally in terms of a North West Passage. Barents succeeded in leaving his name to the sea which is but the beginning of the North East Passage, or Northern Sea Route. Henry Hudson made various voyages in search of both a North East and a North West Passage. John Cabot discovered Labrador and Newfoundland in his search for the North West Passage.

More than brave men and spirit was required to overcome the barriers of ice; none of the expeditions succeeded in discovering a through-route, but experience and scientific data were gradually accumulated. At last, 1878-79, a through-voyage was made by the Swede Nordenskiold in the *Vega*. The North East Passage was a *fait accompli*, but many seals were to be whelped and many icebergs calved before the route would be of practical use.

Although great progress was made in Arctic navigation, the North East Passage was not again traversed in its entirety until 1914-15. This time it was the Russians in the *Taymyr* and *Vaygach* under the command of B. A. Vil'kitskiy who took the honors. The trip was of little historical importance; the route had been successfully navigated 30 years before by Nordenskiold. The true significance of the voyage lay in its political implications. The expedition sailed under the aegis of the Russian Government. The regime of Nicholas II was beginning to realize the importance of a waterway linking the eastern shores of Siberia with those of the White Sea. The disastrous results of Tsushima Straits might have been averted had Admiral Rozhdestvenski been able to reinforce the Far Eastern Fleet via a relatively short northern route. It was the difficulty of redeploying the Baltic Fleet that focused official at-

★ ★ ★ ★

Favorable Impression

ONE DAY LAST FALL while attending one of the most important local high school gridiron battles in Columbia, S. C., wearing my best dress blue uniform with gloves and swagger stick and my most dignified countenance, my courage almost failed me. As I passed a group of young teen age boys I overheard one of them say, "Man, would you look at that Uncle Sam's cat."

Capt J. W. Duncan

tention on the potentialities of a northern route. The voyage of the *Taymyr* and *Vaygach* marks the shift from economic to strategic motivations. The Tsarist Government had realized the importance of a waterway linking the European and Far Eastern expanses of the empire and was beginning to develop such a water-highway when there took place the most significant single historical event in Western Civilization since the fall of the Roman Empire—the Russian Revolution.

The Soviets not only inherited the scientific accomplishments of the Tsarist state; they were heirs to the comprehension of the strategic importance of the North East Passage. While still in the process of suppressing the last White Forces and "Interventionists," they had impressed upon them the strategic potentialities of the Northern Sea Route. White Forces were deployed both in Siberia and in Arkhangel'sk. The units in Arkhangel'sk lacked food which was obtainable in Siberia; the forces in Siberia needed arms which were to be had in Arkhangel'sk. The most expeditious means of exchanging these supplies was via the Kara Sea. Nine ships succeeded in sailing from Arkhangel'sk to the Ob' River with munitions, and returned with needed foodstuffs. Negotiations were underway for British support of Admiral Kolchak's forces in Siberia via this northern maritime route, but they came to nought.

In 1920, the KOMSEVERPUT' (Committee of the Northern Sea Route) was formed with a view to developing the northern waterway into an artery of practical communication between European Russia and the Ob', Yenisey, Lena, and Kola rivers. It is noted that nothing was said of the creation of a waterway which would link the European and Far Eastern sectors of the country.

By 1932, Arctic operations had grown to such an extent that KOMSEVERPUT' was found inadequate and was replaced by a new organization, the Chief Administration of the Northern Sea Route (GLAVSEVMORPUT'). It was endowed with a more ambitious goal than its predecessor: namely, the development of the Northern Sea Route from the White Sea to the Bering Strait.

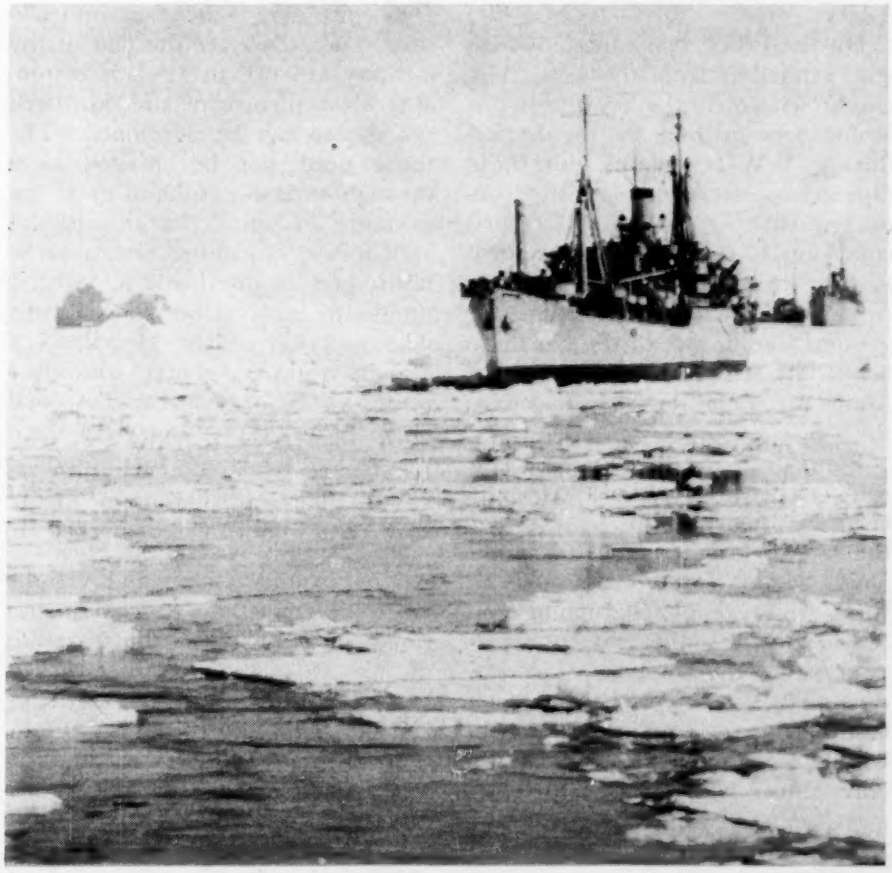
In keeping with the expansion of the administration, the *Sibiryakov,* a Glasgow-built icebreaker, set sail eastward along the Siberian coast with a party of Russian scientists. After being the first vessel to sail around the northern tip of Severnaya Zemlya, the *Sibiryakov* lost a propeller blade in heavy ice. Thereafter, the log relates one mishap after another. With the help of a jury-rigged sail the *Sibiryakov* limped along until she was taken in tow by a trawler.

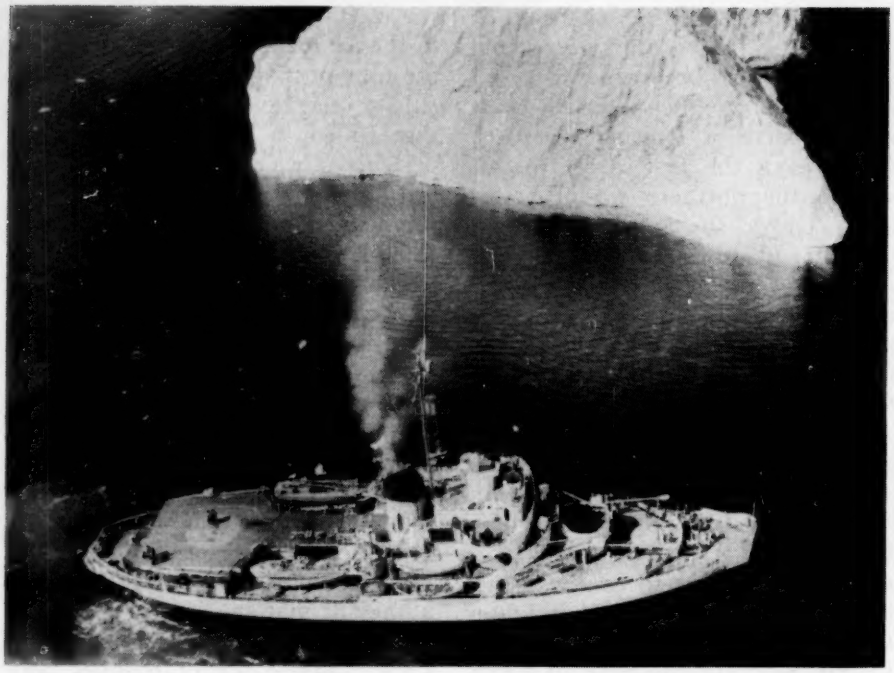
In spite of numerous difficulties, the Soviets planned a new type ship —the *Chelyushkin,* a freighter with a strengthened hull and other modifications for Arctic navigation. If successful, she was to be the prototype of a future northern freighter fleet. The ship sailed in 1933 with O. Yu. Schmidt, the head of GLAVSEVMORPUT', in command. When nearly to Bering Strait, the *Chelyushkin* was trapped by heavy ice and sank. The crew was saved, but it was a hard blow for GLAVSEVMORPUT'.

The year 1937 was equally discouraging. Several convoys were unable to forge through the ice in the vicinity of Proliv (Strait) Vil'kitskovo. Twenty-six ships were frozen in the ice for the winter. Coming at the time of the purges, it is not difficult to imagine the number of heads that rolled in GLAVSEVMORPUT'. If perhaps only a coincidence, it is ironical to note that the man chosen as the new chief of GLAVSEVMORPUT' in 1939, I. D. Papanin, was adrift on an ice floe in 1937. His expedition not only won him recognition, but freed him from implication in the fiasco of 1937; if a bit chilled, he weathered the purges.

GLAVSEVMORPUT' suffered the loss of many functions as a result of the 1937 incident and the purges. It was relieved of territorial administrative functions and was told to concentrate on northern navigation and attendant matters.

The threat of impending war in 1939 loosened Soviet tongues, and the world was allowed to learn what significance the Soviets themselves attached to the Northern Sea Route. At the 8th Party Congress, V. M. Molotov stated that the object of GLAVSEVMORPUT,' under the third Five-Year Plan was, "... to transform the Northern Sea Route into a normal functioning waterway, securing a regular link with the Far





East." Molotov also spoke of developing internal waterways. Comrade Papanin, then head of GLAVSEVMORPUT', was more explicit:

> "Tsushima will never be repeated. And if need be, our squadrons will pass along the Northern Sea Route; will pass along in order to annihilate the enemy in his territory, on his land, and in his waters."

For the USSR, war came not with east winds but from the west. The extent to which the Northern Sea Route was utilized by the Soviets during WWII remains uncertain. Operations were apparently conducted with small losses. Normal conditions of poor visibility rendered surface shipping relatively immune to German air attacks. Perhaps the greatest significance of the Northern Sea Route was its role as a maritime route for Lend-Lease goods from the US.

Between 23 and 34 ships sailed the route each year. Some of the freighters were Liberty Ships, which were the largest freighters to sail in the Soviet Arctic waters to that time. All ships were completely manned by Russian crews; the Soviets maintained that the presence of Americans on the vessels would be an excuse for Japanese action against the USSR. It seems clear that the Soviet Navy didn't wish US eyes to scrutinize operations along the Northern Sea Route. Little did most Americans realize that while the USSR was a military ally, she was a political enemy.

It is highly probable that units of the Soviet Northern Fleet were redeployed to the Far East via the Northern Sea Route, although Soviet operations against Japan lasted but 6 days. The Soviets are reticent on this point in their war histories.

In spite of a paucity of information, especially after the end of the military alliance in 1945, a reasonably clear picture of the Northern Sea Route can be developed. The route need not be utilized as a through-waterway to be of great importance. Ground forces, airfields and rocket launching sites can be built and maintained in Siberia thanks to the Northern Sea Route. The isolation of the Heartland is also its weakness. There are only 3 routes to the Soviet Far East and only 2 routes into the Heartland which are adequate for economic and military purposes. The Far East may be supported by the Trans-Siberian Railway, via the Suez Canal or around Africa, and via the Northern Sea Route. Central Siberia can be supplied with the materials of war, to include possible rockets earmarked for Chicago or Seattle, by rail or by the Northern Sea Route. The railroads of the USSR are already overtaxed. That the Trans-Siberian Railroad could serve the military needs of the Far East during a major conflict is doubtful; *ergo,* the increased importance of the maritime route. The Global Concept involves more than the realization that the shortest distance between the US and the USSR is along an arc of a great circle which bends over the Arctic. The outcome of a future conflict may well hinge upon the ability to construct and maintain installations in the Arctic. This is a race that can not be won after the outbreak of hostilities. It is a race being run by the Soviet Navy at present; we must not play the part of an overconfident hare.

The navigational season along the Northern Sea Route is admittedly short, varying from 70 to 120 days between the end of June and the middle of November. The extremities of the route are ice-free before the central section. In one respect this is advantageous, as it allows the formation of convoys on the eastern and western flanks in anticipation of the freeing of more internal waters. River mouths are ice-free before the sea; this permits the staging of freight at river ports prior to the arrival of east-west shipping. The crux of the economic and military problem is the quantity of freight that can be moved. This, in turn, depends not alone on the length of the navigational season but additionally upon such variables as ships' speed, turnaround time, and the capacity of freighters. The Soviets may be unable to substantially lengthen the navigational season, but they are attacking the other factors.

Viewed as a strategic maritime link between European and Far Eastern waters, the short navigational season is definitely a limitation; however, the admitted limitation does not preclude the possible decisive use of the route. An illustration of the potential of the waterway is the passage of the German raider *Komet* in 1940 from Novaya Zemlya to Bering Strait in 21½ days, of which only 14 days were steaming time. There is no logical reason why the bulk of the Baltic, Northern or Far Eastern fleets could not be redeployed in the same manner. The numerical and strategic preponderance of the Soviet Navy is capable of redeployment through Soviet inland waterways. It must, therefore, be concluded that the Soviet Fleets are not divided, as tradition would

have it, but that they have a potential of covert redeployment via inland waterways and the Northern Sea Route. This lends a new omnipresence to once divided fleets.

The remarks of Comrade Papanin were, in 1939, directed at Japan. Today, a threat to the security of Japan is a threat to the best interest of the US and world peace. The remarks are equally applicable to Alaska. World domination is a basic doctrine of the Communist Manifesto. That communism can not for long coexist with other political systems has been reiterated and reaffirmed — not denied — by Lenin, Stalin, Malenkov, Krushchev and Bulganin. Increase the potential of the Soviet Navy to correspond with the 1958 order of battle and an additional 18 years of experience in the Arctic, and there exists not only the intent but also the capability to execute Comrade Papanin's caveat.

One of the basic tenets of communism is the unity of opposites. In communist eyes every thesis is opposed by an antithesis resulting in a synthesis; every plus is neutralized by a minus. But acceptance of Marxian dialectics is not prerequisite to the realization that Soviet Arctic capabilities must be countermined by our own efforts. To date, what has been accomplished?

The North West Passage was not navigated in its entirety until 1903-06 when Roald Amundsen of Norway made the first through east-west voyage; this event took place 27 years after Nordenskiold had etched his name in Arctic annals. Between the end of WWI and the beginning of the second world conflict, the Soviets accomplished so much more in the Arctic than did Greenland, Canada and the US combined, that a comparison between them is impossible. In 1927, in connection with explorations incident to the Navy's petroleum reserve, an installation was established at Point Barrow, Alaska. An annual expedition of a few ships to resupply this outpost constituted the Navy's first experience with Arctic transport and logistic supply problems. The number of ships and personnel as well as the tonnage carried was insignificant. Just prior to 1940, more than 100 steamers were operating off the Arctic coasts of the USSR, with more than twenty of this number making through passages between European and Far Eastern waters. In the North American Arctic some half dozen steamers were in service; none of this number sailed the full length of the North West Passage. When, in 1937, 26 Soviet ships were frozen in the ice for the winter, the US and Canada combined had no comparable number of ships operating in Arctic waters. Only in 1944 did the *St. Roch*, a Royal Canadian Mounted Police Ship, make the first west-east voyage through the North West Passage.

American captains of industry and finance were not interested in opening an Arctic route. In Russia, the first impetus had come from commercial interests as represented by Sidorov, Sibiryakov and others. Many Canadian financiers who had a share in the railroad didn't wish to see dividends shared with a maritime competitor. Sparsity of population in the Canadian north has been one of the principal factors retarding commercial development of Arctic shipping, but other small nations have been keener in undertaking Arctic commercial investments than have the US and Canada.

The US Navy has acknowledged its Arctic responsibility. Whereas a mantle of secrecy has shrouded Soviet naval activities in the Arctic since WWII, in 1946 the interested US citizen could read of OPERATION ICEBERG, OPERATION FROSTBITE and other Arctic maneuvers. Submarines, aircraft carriers and other fighting ships were pitted against ice and fog. Beginning in 1947, 2 LST's sailed annually to Barter Island in connection with a Loran project. All of these operations were highly commendable, but they were only a small beginning in a strange environment already familiar to the world's most rapidly growing navy—the Soviet Navy. Extensive Arctic transport work was started only in 1951 with OPERATION BLUE JAY. Some 106 ships transported the tons and tons of materiel necessary to establish bases on the coasts of Newfoundland, Labrador and the western shore of Greenland as far north as Thule. After 1951, the resupply of these bases became more or less routine.

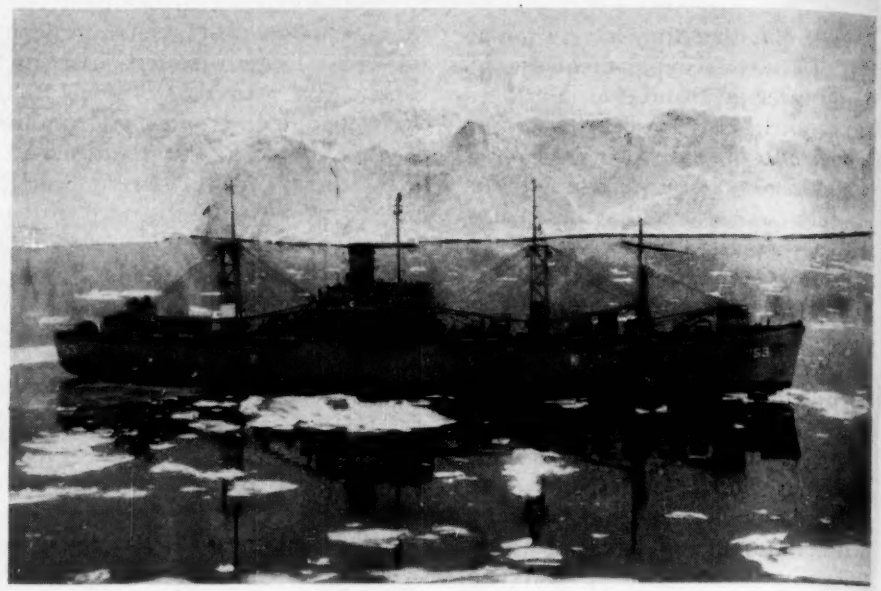
In the summer of 1953, a task force landed 10 LSTs on the northern coast of Alaska to deliver equipment and supplies for the Distant Early Warning radar net (DEWLINE) which extends across the frozen top of North America from Cape Lisburne on the northwest coast of Alaska to Baffin Island. In 1955 the Military Sea Transportation Service, a part of the operating forces of the Navy, was charged with further support of DEWLINE. The 1955 Arctic Operation exceeded all past Arctic achievements in the number of ships participating and the tonnage moved. VAdm Francis C. Dene-

brink, Commander Military Sea Transportation Service, said of the operation:

"It should be understood that in an endeavor of this kind, a basic essential is a knowledge of the geography, topography, and hydrography of the area. Concerning geography and topography, we were quite well informed. . . . In the field of hydrography we were not so fortunate. Bear in mind, please, that until this year [1955], except for the voyages of exploration and icebreaker forays and occasional whalers, no cargo ship had ever gone east of Barter Island nor had any deep draft cargo ship ever gone east of Point Barrow. On the Atlantic side no cargo ships had ever entered Foxe Basin or touched on the eastern coast of Baffin Island. For all practical purposes, therefore, in large sections of the area we were faced with the navigation of waters about which little was known. In Foxe Basin, for instance, our hydrographic data consisted of the reports of the Englishman Parry who explored portions of the area about 1823; the record of some soundings made from a canoe near the northeastern shore by an explorer named Manning and a single-line of soundings made in the central part of the Basin by two icebreakers in 1940."

VAdm Denebrink has been quoted at length to emphasize the crux of our backwardness in the Arctic—inadequate familiarity with the area and inadequate scientific support. Whereas the number of Soviet polar stations is counted by the hundreds, US and Canadian polar stations and bases number only in the dozens. Even if due consideration is given the longer Soviet coast, the comparison is not encouraging. Scientists were put aboard Soviet icebreakers beginning in the 1920's. The data which Comrade Papanin collected on his icy perch in 1937-38 are now integrated parts of sailing directions and long range ice forecasts. Since about 1945, the USSR has issued tidal and current atlases and expansive surveys of her Arctic seas.

Ice forecasts and hydrographic surveys are as essential to Arctic navigation as fuel. If, in 1955, the soundings recorded by Parry in 1823 were the best "hydrographic surveys" available, is there any justification for not proceeding ahead at flank speed to end the enigma of our Arctic waters?



Should the foregoing remarks be judged too sombre, let us hasten to examine a field in which Americans have excelled—marine architecture. The Soviets have always possessed a larger fleet of icebreakers than any other country. This is understandable if one remembers that the White Sea, the Baltic Sea, the Arctic seas, the Pacific, and even the Black and Caspian seas must at times be kept open by the use of icebreakers. It is also worth noting that this frozen maritime environment has contributed to present Soviet experience in the Arctic.

The Soviets claim that they invented the icebreaker in 1868; however, in 1837 *City Ice-Boat No. 1* was built in the US for use on the Delaware. Not until after the strategic lesson of the Russo-Japanese War were 2 icebreakers, the *Taymyr* and *Vaygach*, ordered for use along the Northern Sea Route. During WWI, most of the icebreakers operating about Arkhangel'sk were British built. Only in the 1930's was any serious consideration given to the design of new icebreakers. Prior to this period, practically all icebreakers had been foreign built. The first major Soviet icebreaker, the *Joseph Stalin*, made its debut in 1938. Other ships of the class didn't enter service until just prior to WWII.

Although these were the first large Soviet-built icebreakers, at the time of their launching they were the best equipped breakers afloat. Soviet tactics of "borrowing" tested ideas did not originate with the atomic bomb. British-built ice-breakers delivered to Russia during WWI were studied to develop pre-WWII Soviet craft. During WW II, the US transferred 3 *Northwind* class breakers to the USSR. One ship was returned in 1949, and the other 2 were finally returned in December, 1951. It is certain that any features of these ships which appealed to the Soviets are now incorporated in the Soviet atomic icebreakers reportedly now under construction.

Meanwhile, bigger and better US breakers are sliding down the ways. The *USS Glacier* is equipped with pontoons fore and aft to give the ship extra buoyancy, a 1,200-foot balloon-rigged antenna and other new features. Among developments of the Sea Transportation Service are 3 ship types for Arctic operations: 2 ice-strengthened cargo ships and an ice-strengthened tanker. Although the USSR presently possess the world's largest fleet of vessels designed for Arctic operations, the US Navy's Arctic Fleet is materially second to none.

What then is the deterrent to development of a North West Passage? Is the nature *per se* of the North West Passage an explanation of its retarded development? There are, in fact, numerous potential North West Passages around North America. There is a sharp distinction between the desirability of the various

possible passages depending upon their *raison d'etre*. The vessels of the Hudson Bay Company pick up goods, which have been transported down the Mackenzie River by steamboats, and then take them eastward to Bellot Strait. Other ships sail westward from the St. Lawrence by way of the North Atlantic. Each ship usually turns back after exchanging cargo at Fort Ross. Purely naval considerations dictate the development of a through route. The Canadian Archipelago is divided by a wide furrow of water between Baffin Bay and Beaufort Sea. It is through this furrow—which consists of Lancaster Sound, Barrow Strait, Viscount Melville Sound and McClure Strait—that the American Northern Sea Route must be developed. With the development of Arctic areas and Alaska, such a through route will be found of great interest to industries located on the East Coast and along the St. Lawrence Waterway.

Such a proposed route includes both natural advantages and obstacles. The harbors of southwestern Greenland never freeze over. There are, therefore, natural all-year bases for all types of craft. Conversely, the waters of Greenland contain numerous icebergs during June and July. The west coast of Greenland is also hazardous due to violent local gales. Otherwise, the Northern Mediterranean is one of the least stormy regions of the world. Tay Bay, on the western side of Bylot Island at the entrance to Lancaster Sound, is a good harbor and is clear of icebergs. The course from Baffin Bay to the Beaufort Sea is complicated more by inadequate hydrographic information than by natural impediments.

One of the most difficult sectors of the entire route is in the vicinity of Point Barrow, Alaska. Because of the Gulf Stream, the concentration of Arctic ice is pushed toward the Alaskan side of the Arctic Ocean. The greatest mass of ice is centered not about the geographic North Pole but about the Pole of Relative Inaccessibility.

No attempt has been made to belittle the challenge of the North West Passage. The obstacles are real, but they are alluring and worthy of our greatest attention. The Soviet Northern Sea Route is equally, or more difficult to navigate.

The shallow bottom of the Northern Sea Route vis-a-vis the generally adequate depths of the North West Passage not only are of immediate significance but have the greatest future strategic implications. The ability of submarines to operate for a prolonged period under ice has been proven. It is not too fantastic to forecast the passage of subsurface craft from the North Atlantic to the North Pacific via Arctic waters at any season of the year. The Soviets may be retarded in similar developments due to the shallow bottoms along many of their northern shores. Inadequate depths may complicate lateral navigation of subsurface craft under the ice.

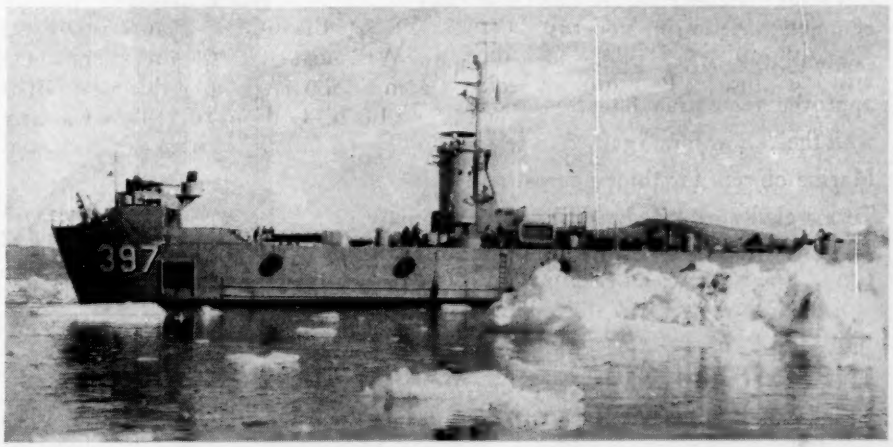
Vilhjalmur Stefansson states that, mile for mile, the North West Passage is no more difficult than the Northern Sea Route, and that 2 round trips per navigational season should be possible between the North Atlantic and the North Pacific. It is the responsibility of the US Navy to prove the validity of Mr. Stefansson's words.

American development of the North West Passage as an antithesis to the Northern Sea Route has been proposed. It is, indeed, ill-advised to blindly oppose all communist endeavors on the basis that their very being must be counterbalanced. Such "strategy" is worse than no strategy and leads to entrapment. But we should recognize the facts: The distance between the North Atlantic and the North Pacific is less via the North West Passage than through the Panama Canal. There is little basis of comparison between the distance through the North West Passage and that around Cape Horn. The *North* Atlantic and *North* Pacific were not selected to prove a *parti pris*. Every one of the world major powers lies north of the equator. Within the Northern Hemisphere are located Eurasia, North and Central America, half of Africa and a small portion of South America. Within this area every one of the major wars of history have been fought. This is not to infer that US interest in the Antarctic is ill-advised, but to assume that future communications between the Atlantic and Pacific oceans will be routed via Cape Horn is to deny the existence of the North West Passage. It is anachronistic thinking of the Japo-Russian War period.

In the September, 1955, issue of the *Naval Institute Proceedings*, Adm Carney stated:

> "Today there can be little doubt that the interim strategy of the Soviet Union is one of controlling selected sea areas adjacent to their own coastal frontier, and then expanding that control as their resources and capabilities increase."

Among the selected areas is the "Soviet" Arctic. Contiguous seas and terra firma are the direct concern of both the US and Canada. Alaska is a prime target for Soviet expansion. The Soviets are aware of Alaska's importance; Alaska guards the Dardanelles of the Arctic Mediterranean. In the event of war, an early attack on Alaska to protect communications between the Soviet Far East and the European USSR via the Northern Sea Route would undoubtedly occur. The ability of US fleet units to repel such an attack would depend to a great extent on familiarity with the waters, adequacy of Arctic bases, and especially Arctic experience — all of which must be



provided now.

The need for air bases, polar stations, ground forces and radar nets in the Arctic is generally recognized. If a trans-polar air attack is to be thwarted, anti-aircraft and anti-rocket sites are needed in the Arctic. All of these installations require logistic support. To again quote Adm Carney:

> "The Navy has always had, and will continue to have, an active and participating interest in improving our national airlift capacity, but we also know the bulk of overseas lifts must for the foreseeable future be moved by sea and protected in transit."

The 1955 Arctic Operations demonstrated the increasing ability of naval transport to meet an ever growing need. As the Polar Concept materializes, so must the ability of the Navy to support the various facets of Arctic operations increase. The desirable, and necessary degree of flexibility will not have been achieved until Atlantic and Pacific Fleets are united by an Arctic maritime highway.

Ships have proven to be the first vehicles powered by atomic propulsion. No other weapon, or mode of transport, presently possesses the degree of maneuverability and the lack of dependence on fixed bases as atomic-propelled ships. It is only a matter of a few years before the US Navy has the beginning of an atomic-powered surface fleet. The combination of atomic propulsion and missile ships portends a revolution not only in naval warfare but a significant revision in our defense concept. It is generally conceded, that if an enemy initiates an atomic war, his first blows will be directed at neutralizing our retaliatory capabilities. Should a potential enemy believe that our retaliatory forces could be neutralized by initial surprise blows, the danger of war would be greatly increased. With the advent of atomic-propelled ships armed with atomic-warhead rockets, the threat of an enemy attack can be significantly lessened. Such vessels are capable of remaining *en garde* for prolonged periods, independent of fixed bases. The location of fleet units at any given time would be unknown; hence, the enemy's inability to neutralize these guardians of peace. If attacked, ships will continue to be less vulnerable launching platforms than fixed bases. They present a small maneuverable target in contrast to a fixed base. They are not targets in close proximity to heavily populated urban areas. For their size, ships possess a greater concentration of anti-aircraft protection than any other launching platform.

The need for hydrographic surveys, polar stations, ice forecasts, and a general greater interest and experience in the Arctic is graphic. Atomic weapons, atomic-propelled ships, and the threat of intercontinental missiles multiply rather than decrease the future importance of the Arctic. Truly, "We must take the current when it serves or lose our ventures."

The Second Polar Year, 1932-33, was organized with the object of obtaining certain geophysical observations at many points on the earth's surface. Even at this early date the Soviets anticipated the strategic value of polar areas and decided to equip new mobile scientific ships and to establish new polar stations. The scientific knowledge acquired at this early date aided the Soviets in establishing their present lead over the US in Arctic research.

Only recently the USSR sent expeditions to the Antarctic to commemorate the International Geophysical Year, 1957-58. The US also had expeditions on the site. We have begun to compensate for past lethargy.

God grant that the Third Polar Year be the peaceful dawn of an Arctic summer, embellished by the splendor of blooming good will among men. Only calm, determined strength can induce such a change of communist permafrost-strategy. The burden of acquiring such strength in the Arctic lies squarely on the relative few who are proud to call themselves Naval officers, men, and interested citizens. US MC

ED: *Since this article was written, the* Nautilus *has proven the feasibility of under-ice operations by steaming more than 1,400 miles under polar ice. In August of last year, the* New York Times *reported the discovery of a new Arctic passage. These events demonstrate the feasibility of the ideas proposed by the author.*

PASSING IN REVIEW

ROCKET

SIR PHILIP JOUBERT de la FERTE. 190 pages, illustrated. Philosophical Library, Inc., NY. $6.00

In these days of mammoth rockets that can project missiles across continents, it is of interest to look back to the birth of the rocket missile that we know today, namely the German V1 and V2 that very nearly caused WW II to have a different ending. *Rocket* is largely the story of how these two weapons were developed, brought into action and defeated.

The author gives us a timely reminder that rockets are not an invention of this century, in fact, solid fuel rockets have been used off and on in battles since the 13th century. It was, however, the Germans (including a young scientist named Wernher von Braun) who, between the WWs, studied rocket propulsion as a means of obtaining a long range weapon which would defeat the terms of the Versailles Treaty. From 1937 to 1943 the research center for this project was at Peenemunde on the shores of the Baltic.

The story of how the Allies came to hear of the development of the V1 Flying Bomb and the V2 Rocket, of the measures that were taken to supplement this intelligence, and of the attack on Peenemunde in August 1943, by 600 RAF bombers, is dealt with in great detail. But that was by no means the end of these weapons and the author goes on to describe the "Battle of the Sites" when allied aircraft bombed all the launching sites that had been constructed in France, and the Germans had to start again.

To anyone who was in London on or after 12 June 1944, this story will revive memories of the V1's engine as it flew overhead—stopped—that being the time to dive for cover! But the V1 did not arrive too often, certainly not as often as the Germans had planned, at the rate of 3,000 a day. A dramatic tale is unfolded of the counter measures that were taken which successfully kept London's ordeal within bearable limits.

A defense against the V2 rocket, and its successors today, still has to be found. The last chapters of the book take a brief look into the future of the "atomic/hydrogen rocket war." The strategy, tactics and reorganization that are required now to be able to defend ourselves in the future are discussed here with great frankness.

Sir Philip Joubert writes, of course, from the British point of view and he pulls no punches in criticisms of his own country's present policy for the Armed Forces, or for that matter of US policy, but his arguments are well balanced and based on a sound appreciation and they give food for considerable thought. Sir Philip writes from much experience having joined the Royal Flying Corps in 1913, and having served most of WW II as the Air Officer Commander in Chief of Coastal Command RAF, and as the Deputy Chief of Staff for South East Asia.

Rocket is a very readable book as well as being an authoritative account of the production and operation of the first rocket missiles. Students of rocket warfare would do well to include this book in their background reading.

Reviewed by LtCol F. C. Barton RM

Ed: LtCol Barton is the Royal Marine Liaison Officer stationed at MCS, Quantico, Va.

SMITH & WESSON REVOLVERS

JOHN E. PARSONS. 242 pages, illustrated and indexed. William Morrow & Co., NY. $6.00

The author of *Smith and Wesson Revolvers,* John E. Parsons, has placed himself in the eyes of firearm experts as an expert on the history of firearms with 3 previous writings such as: *The Peacemaker and Its Rivals* in 1950; *Henry Deringer's Pocket Pistol* in 1952; *The First Winchester,* in 1955.

Smith and Wesson Revolvers is a must for all who know, collect and want to know more about firearms history. In writing the book Mr. Parsons had access to the Smith and Wesson Company records and this was the first time these documents were ever disclosed to anyone other than factory officials. These documents had been kept carefully from the time of the company's beginnings in Springfield, Massachusetts, as an arms manufacturer.

After reading this book you have the feeling that you have just examined the company's records yourself. The personal letters from such men as "Cimarron Beach," Col Schofield, USA, and the Grand Duke Alexis of the Russian Imperial Government are most interesting.

The revolver itself is treated in the detailed aspects of improvements, modification, prices, production and distribution. Other interesting points discussed are the export of the company's arms to Russia and Turkey, and the tests conducted by the US Government in connection with using the arms for US Army employment in the Indian Western Wars.

Reviewed by MSgt R. M. Phillips

Ed: A Master Pistol Shooter (NRA) MSgt Phillips has made shooting a hobby and a major interest in life.

DER SEEKRIEG: The German Navy's Story

VICEADMIRAL FRIEDRICH OSKAR RUGE, GN. 440 pages, photographs, maps, and index. US Naval Institute, Annapolis. $5.00

TWILIGHT OF THE SEA GODS

THADDEUS V. TULEJA. 284 pages, photographs, maps, and bibliography. W. W. Norton & Co., Inc., NY. $3.95

The German Navy, both in WWI and WWII, has posed one of the fascinating might-have-beens of the century for students of naval history. Highly regarded by its opponents, technically advanced, ultra-professional and seamanlike in all things, the German Navy nonetheless never quite enabled either Kaiser Wilhelm or Adolf Hitler to break out and win control of the seas which were vital to both.

Jutland, where in 1916 the Imperial High Seas Fleet missed victory over the British Grand Fleet by only a graze or two, was about the closest call, but there were others; it was out of profound respect for the German Navy that Winston Churchill, during WWI, referred to Adm Sir John Jellicoe (Commander-in-Chief, Grand Fleet) as "the only man who can lose the war in an afternoon."

Mainly avoiding fleet action, however, Germany resorted to the naval strategy of the weaker antagonist, the *guerre de course* which Mahan so often dismissed as a military dead-end. Perhaps. For here again, the German Navy *almost* won, as the U-boat campaigns of both wars, not to speak of Germany's energetic and ingenious surface raiding operations, abundantly testify.

Because of all this, the German Navy is bound to provide interesting reading, and sure enough, 2 books about that navy, almost as different as they could be and still deal with the same subject, have appeared almost simultaneously.

Der Seekrieg: the German Navy's Story comes to us from VAdm Friedrich Ruge, now (in our parlance) Chief of Naval Operations of the new West German Navy. Adm Ruge has ample background for his book since he entered the Kaiser's Imperial Navy in 1914, spent 4 hard war years as a destroyer officer, was retained in the post-war German Navy, rose to senior command during WWII, and is now rebuilding his Navy once again.

Adm Ruge's book is what might be expected from its source—a sober, thoroughly professional, carefully considered historical survey of the German Navy in WWII, and of all the strategic, political and geographical factors which bore on it. His range is intentionally wide rather than narrow. In addition to a detailed account of German and Italian naval operations, he devotes 4 of his 19 chapters to the other major naval operations of the war, mainly those in the Pacific. To the US war against Japan, some might say that he brings more insight and correct appreciation than the naval studies by some of our friends. For example, his trenchant chapter entitled "Amphibious Operations Decide the War" is worth 10 times more than the ill informed, lengthy, and patronizing comments on US amphibious warfare to which we were treated some years ago in *Assault from the Sea,* by RAdm Maund, RN, a self anointed British expert.

In addition to his clear recognition of WWII as an amphibious war, he, like all the German Navy, has the strongest views on naval aviation, of which his navy was robbed by Goering and the Luftwaffe. Here is the ultimate historical example of an independent air force conspiring with a typically land-minded armed forces general staff to castrate seapower — and contribute mightily thereby to the loss of a war.

On national military high command, Adm Ruge has views which are remarkably sound, and particularly noteworthy as coming from a senior German officer who has experienced 2 wars under the Prussian armed forces general staff. Here are a few examples of the Admiral's views:

"The basic principles that must be followed in this process called war derive from sound common sense and are therefore simple to understand. These principles must be applied to the entire war effort of the nation in fields of politics, war and economics. For this reason, the grand strategy is usually better managed by the statesman, who has a wide experience of men in all walks of life, than by the military expert, who is prone to a narrower outlook."

". . . it is unlikely that any person can fully master all the branches of both government and war. It is probably on this account that small and well selected steering committees under the chairmanship of the statesman have in recent times proved superior to the single-handed control of the armed forces, however proficient, in the totalitarian states."

". . . when, in the later course of the war the Supreme Command began to exercise direct control over operations in individual theaters of war, it overreached itself and neglected *its true function of general direction, supervision and compromise.*" (Italics supplied.)

In addition to its solidity and wisdom (in which the book closely parallels Field Marshal Kesselring's admirable memoirs), *Der Seekrieg* is well written, deftly translated (by Cdr M. G. Saunders, RN), and excellently illustrated. For this we have to thank the publishers (US Naval Institute) who have done much intelligent work in encouraging the best professional thinkers among our former enemies to give us the benefit of their ideas. As *Der Seekrieg* proves, brains and power of analysis are never the monopoly of just one side.

Twilight of the Sea Gods, by Mr. Thaddeus V. Tuleja, a history instructor at St. Peter's College (Jersey City, N. J.) and Naval Reserve LtCdr, is at the very opposite end of the spectrum from Adm Ruge's professionalism. In this book, Mr. Tuleja, evidently an ardent and somewhat emotional devotee of the sea and of Norse mythology, chronicles the tragic story of the WWII German Navy in a series of episodic chapters. Principal among these are the stories of the sinking of HMS *Royal Oak* inside Scapa Flow by *U-47;* the cruise of the *Graf Spee;* the last fight of the *Bismarck;* and the Channel breakthrough by the German surface task force from Brest (a humiliation which England had to suffer almost entirely because the Royal Air Force had insisted on taking away from the Navy the naval task of coastal air reconnaissance).

Although the book deals with material of the highest intrinsic interest, *Twilight of the Sea Gods* suffers badly from a number of distracting literary and technical shortcomings. Foremost among these is the author's inability to resist gushes of purple prose — and I mean Real Purple. Why, for goodness' sake, when Mr. Tuleja means "compass," does he have to say, "Flavio's ancient lodestone, set in shining gimbals?" In somewhat the same vein, his continual invocation of, or reference to, various mythological figures (often rather obscure ones), as well as his use (apparently for their own sake) of most unexpected words and rather strained similes, really damages passages which are otherwise well written. Moreover, portions of the book are replete with matter which appears technically questionable or even erroneous. I may do Mr. Tuleja some injustice, but the latter makes me wonder — despite his rank in the Naval Reserve — whether he has ever served very long aboard major combatant ships such as the battleships and cruisers with which his narrative deals.

Despite all that I have said, however, there is no denying the enthusiasm and basic sense of the story which *Twilight of the Sea Gods* conveys. Clearly the author is in love with his subject, and that is all to the good when it can be suitably controlled. Unfortunately in this case, it wasn't always. As this is Mr. Tuleja's first book, let us hope that in the next (and he should by all means keep trying), he finds a mean-spirited editor with a blacksnake whip, a soured outlook—and a heavy grease-pencil.

Reviewed by Col R. D. Heinl, Jr.

Ed: Col Heinl has served extensively at sea in battleships, cruisers and destroyers. He is at present in duty in G-3 Plans, HQMC.

ESCAPE OF THE AMETHYST

C. E. LUCAS PHILLIPS. 274 pages, illustrated; Coward-McCann, Inc., NY. $3.95

The title of this book suggests a modern who-done-it. In fact it is the incredible story of how HMS *Amethyst* outwitted the Chinese Communists on the Yangtze in the summer of 1949.

The story opens with the little frigate steaming up the Yangtze on a purely peaceful routine mission. She was scheduled to take over duties as the RN guard-ship at Nanking, the site of the British Embassy. Since the civil war was then raging throughout China the vessel had taken the precaution of brilliantly illuminating the canvas Union Jacks slung over her sides.

Early the morning of 20 April, without warning of any kind, Communist land batteries hurled 15 rounds at her from mid ranges. None hit the ship, the *Amethyst* did not return the fire and one among her 160-man crew lightly commented, "A first-class example of damn bad shooting."

Forty minutes later and farther up river in the vicinity of Rose Island the shooting improved.

Four shells in quick succession smashed vital parts of the ship, destroying the "low-power room," wheel house and bridge. With the ship out of control, confusion in the engine room and without direction, the little frigate put her bow firmly into the mudbank of Rose Island and became a sitting duck for the nearby Communist batteries. Spasmodically Chinese machine guns added more casualties to the 35 dead and wounded aboard.

The British reacted to the outrage by sending the destroyer *Consort* and later the cruiser *London* accompanied by the frigate *Black Swan* up the Yangtze to rescue the *Amethyst*. All received the same "ruffian treatment" and had to turn back. After a second attempt by a Sunderland flying boat from Hong Kong, a RAF doctor and medical supplies were gotten through to the stricken ship.

With the skipper and other key personnel dead or critically wounded, the young and inexperienced crew was shocked and badly demoralized. It was at this time that LtCdr J. S. Kerans, DSO, RN, destined to get the ship out of her troubles, appeared on the scene.

Kerans was the assistant Naval Attache at Nanking and had been ordered down to bring medical supplies to the wounded crew. After a brutal overland trip made possible only the the complete cooperation of the Nationalists did he reach the frigate. Upon arrival he received a message to take command of the *Amethyst*. And take command he did.

Kerans buried the 17 still-lying-about dead, reorganized the personnel into watches, sharply reminded the officers and petty officers of their leadership responsibilities, informed them as to his plans, warned them of troubled days ahead and instilled needed hope and spirit into his badly shaken crew.

Now began a 3-month cat and mouse game. Kerans, the mouse, was summoned ashore to confer with Communist General Yuan, the cat, at the nearby Communist camp. During May, June and July, Kerans attended 11 conferences with his captors.

The conferences got nowhere. Meanwhile the crew sweltered in their steel tomb under the scorching 100-degree summer sun. Oil was running dangerously low. Food was scarce and monotonously dull. No mail. Rats began multiplying and cockroaches, ants, and mosquitoes increased daily. On top of this the monsoon season was now upon them.

With the conferences stalemated, his supplies down to an irreducible low and with barely enough fuel to get him to the mouth of the Yangtze, Kerans' "appreciation" compelled him to make a moonless night escape down the treacherous 150 miles without benefit of pilot or adequate charts.

The climax of the book is Kerans' dash to safety. This is the *Amethyst's* finest hour where the courage and skill of the crew make possible an otherwise impossible task.

I thought this true-adventure tale somewhat slow in getting started and basic ship description a trifle boring. A large parade of secondary characters with hints as to their later heroics could have been equally well omitted. However, once Kerans appeared on the scene the book's interest sharpened quickly. From here on the author's skill in creating a suspenseful true-life-drama gave real meaning to the words of the Commander-in-Chief Far East Station, Adm Sir Patrick Brind, GBE, KCB, who said that the escape "will be epic in the history of the Navy."

Reviewed by LtCol L. E. Hudgins, Jr.

Ed: LtCol Hudgins spent 2 years with the British as CMC's representative to the Joint Services Amphibious Warfare Center and is now executive officer, 2d Marines.

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